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Rev. M. J. Berkeley, F. L. S., and the Rev. M. A. Curtis, "On the Exotic Fungi from the Schweinitzian Herbarium in the Acad. Nat. Sci. of Philadelphia," was presented and referred to Dr. Zantzinger, Mr. E. Durand and Dr. Bridges.

Mr. Cassin exhibited the specimen of Scalops, described by him, under the name of *Scalops metallescens*, in the paper presented this evening. This specimen was collected in Oregon by the Naturalists attached to the Exploring Expedition under the command of Capt. Wilkes, U. S N., and is one of the most remarkable species of the family to which it belongs.

February 22d.

Vice President **BRIDGES** in the Chair.

The Committee to which was referred the following paper by Dr. Woodhouse, reported in favor of publication in the Proceedings:

Description of a new species of Mouse, of the genus Hesperomys, Waterhouse.

BY S. W. WOODHOUSE, M. D.

HESPEROMYS TEXANA.

Char. Essent.—Smaller than the H. leucopus, head shorter and more blunt, ears smaller and more round, brown above, and white, inclining to yellowish, beneath.

Description.—Head large, blunt. Eyes prominent, and dark brown. Ears large, erect, roundish, oval, blunt, sparsely covered outwardly with short appressed brown hairs, inwardly with grey. Thumb of fore feet a tubercle, furnished with a long blunt nail, two middle toes the longest, subequal. Hind feet furred, with the exception of the sole. Whiskers long.

Color.—Hair dark cinereous, above tipped with pale brown, and dusky, so as to have rather a mottled appearance; beneath white inclining to yellowish; the two colors, that is to say above and beneath, tolerably distinctly separated from each other in a straight line. Tail above brown, beneath white; nose mixed brown and grey, or pale brown. Whiskers black and grey; legs white on their inner surface only, feet white, the hairs projecting over the nails.

Habitat.—Western Texas.

Dimensions.

Total length from tip of nose to root of tail,	2 1-10 inches.
" " of tail,	2 1-10 "
" " of head,	1 1-10 "
Height of ear,	4-10 "
Breadth of ear,	3-10 "
Fore legs,	1 "
Hind legs,	1 6-10 "

Observations.—I procured this little animal on the Rio Grande near El Paso, whilst attached to the party under the command of Captain L. Sitgreaves, U. S. Topographical Engineers, on our way to explore the Zuni and Colorado rivers. Of its habits I know nothing. My attention was called to this animal by Major Le Conte, who has been for some time engaged in the study of the mice of our country.

The Committee on Mr. Conrad's "Synopsis of the North American Naiades," reported in favor of publication in the Proceedings:

A Synopsis of the Family of Naiades of North America, with Notes, and a Table of some of the genera and sub-genera of the Family, according to their geographical distribution, and descriptions of genera and sub-genera.

By T. A. Conrad.

The present attempt to give a synonymy of the North American Naiades, has originated from the absence of dates and references in Mr. Lea's memoirs. To render strict justice to every authoraccording to date of publication, is not only the duty of the naturalist, but a necessity of science. The difficulty in the attempt is to ascertain with precision the date of publication of each species, and when this cannot otherwise be obtained, perhaps it would be right to refer to the date on the title-page of the volume wherein the species may be described. Mr. Lea never refers to the date of publication, but says, "my memoir bears date," &c., which means, the day it was read before a meeting of a Society, though not published in some instances until two years afterwards. In adopting the names given by Rafinesque, the rule will be observed to quote no species without a mark of doubt, which is not clearly borne out by the description, assisted by reference to Rafinesque's shells marked by his own hand, and now placed in the noble collection of Charles A. Poulson, Esq.

It is true Rafinesque's descriptions are brief and many of them obscure, and his figures rude. Others again are better characterized than some of Lamarck's. Mr. Lea complains that Say has not left him one species in his very short and incomplete "Synonymy of Western Unios;" but on the other hand, Mr. Lea credits Rafinesque with only two species of the sixty or seventy he has named and described.

Every man must work according to his means and his abilities. Rafinesque, in his day, was destitute of the advantages many naturalists now enjoy, and could not publish expensive plates; and, unfortunately, he had the examples of Linné and Lamarck for short and indefinite descriptions. If Rafinesque's names should be rejected, there seems no reason why Lamarck's should not share the same fate.

Of late years, Comparative Anatomy has shown that genera can readily be founded on differences in organisation of the animal inhabitants of shells varying little in external character, whilst among the Naiades there are divisions so well marked by the external character as well as the hinge, that generic differences can be safely predicted to exist among the animals which inhabit them. These various genera are moreover not indiscriminately placed in every quarter of the globe, but some are peculiar to one country and some to another, as Paxyodon and Prisodon to tropical South America; Pleiodon to tropical Africa, &c., and yet an author, even in the present day, is content to arrange the Naiades in a singularly artificial system, embracing one genus and seven subgenera. Mr. Gray's arrangement is far more natural and useful, but he does not subdivide to the extent that Mr. Swainson did, who was the first to give a philosophical view of the subject, and to have an idea of geographical distribution of genera. Mr. Swainson, speaking of the tuberculated Unios of North America, observes, "Where we find a character, however trivial it may appear, pervading a whole group, we may be perfectly assured that it is a natural character, although it may not be the only one." And if this is true of the exterior, a similar uniformity of character in the hinge is still more important; and how strongly marked it is in Paxyodon, Pleiodon and others!

It is supposed that this family existed at as early a period as the Carboniferous, but it is doubtful if the shells usually referred to Unio were members of this group. Certainly none of the existing genera are represented in the bivalves of that era, nor is there any even in the Lower Tertiary; but in the Crag or Middle Tertiary, the two genera, Unio and Anodonta make their first appearance.

It is worthy of remark that a genus so nearly related to Unio as Trigonia, abounded in numerous species in the Oolitic and Cretaceous eras, and then ceasing to exist during the long Tertiary periods, reappeared in a solitary species of the present day. Is not this long interval between the fossil and recent species, presumptive evidence that the animal of the living shell is generically different from that of the extinct species? The hinge of a bivalve shell will not always serve to determine a genus, else PLATYODON, would be a MYA, and MYCETOPUS an ANODONTA; but when a material difference exists in the hinge, some important variation may be expected to exist in the animal organization. By means of Comparative Anatomy, Agassiz has discovered differences in the animals of the North American UNIOS, which he considers sufficient to warrant the construction of several genera, and when these are fully determined and compared with those of Asia, Africa, &c., it will very likely be found that the various genera are restricted to narrower geographical limits than the mere external characters of the shells would lead us to suppose.

I have at present not ventured to do more than indicate *subgenera*, except among a few distinct groups. In COMPLANARIA, *Swains.*, the hinge is so peculiar and different from the other genera, that it is fully as well entitled to a generic distinction as ALASMODONTA or BARBALA. There is another small group which is somewhat isolated, the plicated shells, having bold and distinctive characters. This has been separated from UNIO under the name of PLECTOMERUS. The only aberrant form in the genus is *U. crassidens*, Lam., which, however, has no affinity with any other group. *U. infucatus*, though somewhat plicated, has a very different character, and belongs to a distinct group. The *U. rotundatus*, Lam., is an isolated shell, with the cardinal teeth more like those of NAIA, *Swainson*, an Asian subgenus, than the other North American UNIOS.

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LEA.—Transactions of the American Philosophical Society, Second Series.
Synopsis of the Family of Naiades, 1852.
CON.—Monography of the Family Unionidæ.
Proceedings and Journal of the Academy of Natural Sciences, Second Series.
New Fresh Water Shells, May, 1834.
CHENU.—Illustrations Conchologiques, &c.
CHEMN.—Chemnitz (Martini) Neues Syst. Conchyl.
BARNES.—American Journal of Sciences and Arts, vol. vi. 18.
HILDRETH.—Ib. ib. ib. xiv. 18.
DESH.—Deshayes, New Ed. of Lamarck's Anim. sans Vertebres.
FERUSSAC, in Guerin's Mag. de Zoologie, 1835.
LAM.—Lamarck, Hist. Nat. des Animaux sans Vertebres.
RAF.—Rafinesque, Les Annales general des Sciences Physiques, 1820.
SAY.—Nicholson's Encyclopedia, American edition, article Conchology, vol. 4, 1819.
American Conchology, with a Synonymy of Western Unios.
Transylvania Journal of Medicine.
New Harmony Disseminator.
SWAINS.—Swainson, Exotic Conchology; Zoological Illustrations; Malacology.

NOTE. The Roman numerals refer to the volume, and the figures following indicate the page, plate and figure. An asterisk (*) indicates the doubtful species.

UNIO.

Unio abacus, *Hald.*, Journ. A. N. S. viii. 202.
Lea, Synopsis, 24.
Aberti, *Con.*, Proceed. A. N. S., March, 1850, v. 10.
U. Lamarckianus, *Lea*, 1852, x. 22, 17, 20.
acutissimus, *Lea*, Aug. 1834, iv. 89, 10, 18.
Con. Monog. 86, 47, 2.
Chenu, Conchyl. Unio, pl. 8, fig. 3.
affinis, *Lea*, 1852, x. 271, 19, 26, Synopsis 27.
amœnus, *Lea*, 1841, viii. 200, 10, 12, Synopsis 29.
Chenu, Conchyl. Unio, pl. 33, fig. 5.
amygdalum, *Lea*, 1846, ix. 275, 39, 1. Synopsis 39,
altilis, *Con.*, New F. W. Shells, 43, 2, 1.
Lea, Synopsis, 27.

Unio angustatus, *Lea*, 1832, v. 114, 17 , 43. Synopsis 23.
Con. Monog. 98, 54, 2.
Chenu, pl. 14, fig. 1.
apiculatus, *Say*, New Harm. Dissem., 1829, Amer. Conch. pl. 22.
Con. Monog. 78, 44, 1.
Lea, Synopsis, 22.
U. asper, *Jay*, not *Lea*, Jay's Catalogue, 55.
approximus, *Lea*, 1845, x. 74, 5, 13. Synopsis 28.
*arctior, *Lea*, 1838, vi. 10, 4, 10, Synopsis, 38.
Chenu, Conchyl. Unio, 21, 2.
arctatus, *Con.*, Sill. Jour., xxv. 340, 1, 9; New F. W. Shells, 36, 5, 4.
Lea, Synopsis, 38.
arcus, *Con.*, Sillim. Jour. 1834, xxv. 340. 1, 8.
Lea, Synopsis, 38.
argenteus, *Lea*, 1841, viii. 242, 25, 57, Synopsis, 26.
Chenu, Conchyl. Unio, pl. 33, fig. 2.
asper, *Lea*, (*a*) 1832, iv. 85, 9, 15, Synopsis, 22.
Chenu, Conchyl. Unio, pl. 15, fig. 4.
U. apiculatus, var. *Jay*, Catalogue, No. 1496, 55.
Barrattii, *Lea*, 1852, x. 256, 13, Synopsis, 37.
Barnesianus, *Lea*, 1838, vi. 31, 10, 26, Synopsis, 24.
Chénu, Conchyl. Unio, pl. 19, fig. 2.
*biangulatus, *Lea*, 1841, viii. 197, 9, 8, Synopsis 38.
Chenu, Conchyl. Unio, pl. 30, fig. 7.
Bigbyensis, *Lea*, 1841, viii. 237, 22, 51, Synopsis 24.
Chenu, Conchyl. Unio, pl. 26, fig. 5.
Binneyi, *Lea*, 1845, x. 77, 6, 18, Synopsis 29.
Blandingianus, *Lea*, Aug. 1834, v. 101, 15, 44, Synopsis 33.
Con. Monog. 46, 23, 3.
Kust., Chemn. Unio, 36, 6, 2.
Bournianus, *Lea*, 1841, Synopsis 25, viii. 213, 15, 28.
Chenu, Conchyl. Unio, pl. 28, fig. 2.
Brumbyanus, *Lea*, 1841, viii. 245, 26, 62, Synopsis 31.
Boydianus, *Lea*, 1841, viii. 216, 16, 32, Synopsis 38.
Chenu, Conchyl. Unio, pl. 32, fig. 2.
Buckleyi, *Lea*, 1846, ix. 276, 39, 2, Synopsis 30.
Buddianus, *Lea*, 1846, ix. 277, 40, 4, Synopsis 32.
buxeus, *Lea*, 1852, x. 261, 15, 13, Synopsis 29.
bullatus,* *Raf.* Ann., Sept. 1820, v. 41. Poulson's Trans., 23.
Con., Monog. 82, 45, 2.
Ferussac, Guerin's Mag. 28.
U. verrucosus albus, Hildreth, Sillim. Journ. xiv. 289.
U. pustulosus, *Lea*, 1832, iv. 76, 7, 7. Synopsis, 22.
Chenu, Conchyl. Unio, pl. 18, fig. 2.
capax, *Green*, Cab. of Nat. Hist. 1832, ii. 290.
Con., Monog. 75, 42.
Ferussac, Guerin's Mag. 1835, 26.
Symphynota globósa, *Lea*, 1834, iv. 153, 4, 12.
U. capax, *Kust.* Chemn. Unio, 21, 15, 3.
Lea, Synopsis, 27.
cælatus, *Con.*, Sillim. Journ. 1834, xxv. 338, 1, 2.
Lea, Synopsis, 20.

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* Say makes this species the same as *Mya modulosa*, Wood, which is very different, and evidently not an American species.

Unio caliginosus, *Lea*, 1845, x. 79, 7, 21, Synopsis 29.
callosus, *Lea*, 1841, viii. 239, 23, 54, Synopsis 33.
camptodon, *Say*, Amer. Conch. pl. 42.
Ferussac, Guerin's Mag. 26.
U. Sayi, *Lea*, (not Tappan), Synopsis, 32.
capsæformis, *Lea*, 1834, iv. 143, 2, 4, Synopsis 33.
Con. Monog. 72, 40, 2, 3.
cardium, *Raf.* Ann. 1820, 32, Poulson's Trans. 27.
Say, Amer. Conch. 32, Synonym. of Unio, No. 11.
U. ventricosus, *Barnes*, Sillim. Journ. vi. 267, 13, 14.
U. occidens, *Lea*, 1832 (?) iii. 435, 10, 16.
Synopsis, 26.
Chenu, Conchyl. Unio, pl. 13, fig. 5.
U. subovatus, *Lea*, 1832, iv. 118, 18, 46.
Chenu, Conchyl. Unio, pl. 12, fig. 6.
U. ovata, var. *b.* ? Lam. An. vi. 75.
cariosus, *Say*, (*b*) Nicholson's Ency., article Conch., pl. 3, fig. 2.
Lam. Desh. An. sans Vert. vi. 545.
U. ovata, *Valen.*
U. cariosus, *Kust.*, Chem. Unio, 24, 1, 2, 3.
Barnes, Sillim. Journ. vi. 271.
Con., Monog., 40, 19.
Gould, Invertebrata of Mass., 107.
Dekay, Zool. of New York, 193.
Lea, Synopsis, 27.
Lampsilis cariosa, Agas. MSS. Stimpson's Shells of New Eng. 14.
Carolinanus, *Bosc. Fer.* Guerin's Mag. 26.
U. obesus, *Lea*, 1832, iv. 96, 13, 26, Synopsis, 32.
Chenu, Conchyl. Unio, pl. 18, fig. 4.
castaneus, *Lea*, 1832, iv. 91, 11, 21, Synopsis 26.
Ferussac, Guerin's Mag. 28.
Chenu, Conchyl. Unio, pl. 11, fig. 5.
catillus, *Con.*, Monog. 1836, 30, 13, 2.
Kust., Chemn. Unio, pl. 10, fig. 2.
cerinus, *Con.*, (*c*) Monog. 1838, 95, 52.
U. flavus, *Lea*, (not Raf.) Synopsis, 24.
cicatricosus, *Say*, Disseminator, 1829.
Con., Monog., 115, 64.
Ferr., Guerin's Mag., 28.
U. varicosus, *Lea*, 1832, iv. 100, 11, 20, Synopsis, 23.
Chenu, Conchyl. Unio, pl. 2, fig. 6.
Cincinnatiensis, *Lea*, 1841, viii. 194, 8, 4, Synopsis, 22.
Chenu, Conchyl. Unio, pl. 30, fig. 3.
Claibornensis, *Lea*, 1838, (young shell,) vi. 105, 24, 115, Synopsis, 28.
Chenu, Conchyl. Unio, pl. 23, fig. 3.
U. obtusus (?) *Lea*, viii. 201, 11, 13.
Clarkianus, *Lea*, 1852, x. 273, 21, 30, Synopsis, 28.
clava, *Lam.* An. sans Vert. vi. 74. *Desh.* ed. of Lam. vi. 537.
Ferussac, Guerin's Mag. 28.
Con., Monog. 5, 3.
U. mytiloides, *Raf.* v. 47, Poulson's Trans., 47.
U. scalenia, *Raf.* Ann. v. 43, Poulson's Trans. 47.
U. cuneatus, *Raf.* Ann. v. 47, Poulson's Trans. 53.
Say, Amer. Conch. Syn. No. 35.
U. modioliformis, *Say*, (not Lea.)
U. clavus, *Lea*, Synopsis, 26.
Kust. Chemn. Unio, 39, 7, 2.

Unio coccineus, *Hildreth*, MSS.
Con., Monog., 1836, 29, 13, 1.
Lea, 1838, Synopsis, 35, vi. 12, 5, 12.
collinus, *Con.*, Monog., 65, 36, 2, and 159, 60, 3.
Lea, Synopsis, 23.
complanatus, *Soland. Lea*, (*e*)
Mya complanata, Soland. Portland Catalogue, 100.
Dillwyn, Catalogue, i. 51.
U. complanatus, *Lea*, Synopsis, 32.
violaceus, *Speng.*, Ferrus, Guerin's Mag. 26.
coarctata, *Lam.*, Anim. vi. 75.
Desh. ed. of Lam. vi. 535.
Enc. Method, ii. 581.
purpurascens, *Lam.*, Desh. ed. vi. 536.
rhombula, " var. b. " " "
carinifera, " " " "
Georgina, " " " "
sulcidens, " " " 540.
glabrata, " " " 537.
rarisulcata ? " " " 534.
aurata, *Raf.*, Ann. Poulson's trans. 27.
jejunus ? *Lea*, vi. 9, 4, 9.
Chenu, pl. 20, fig. 1.
Roanokensis ? *Lea*, vi. 27, 8, 21, Synopsis, 32.
Delassert, Recueil. de Conchyl. pl. 12, fig. 3.
Chenu, pl. 12, fig. 5.
complanatus, *Gould*, Invert. of Mass. 107, 68, 69, 70.
Dekay, Zool. of New York, 188, 22, 246.
Agas., Stimpson's Shells of N. Eng. 13.
purpureus, *Say*, Nicholson's Enc. fig. 3.
Barnes, Sillim. Journ. vi. 264.
concavus, *Lea*, 1852, x. 260, 15, 1,1, Synopsis 29.
Congaræus, *Lea*, 1832, iv. 62, 6, 4, Synopsis, 27.
Con., Monog., pl. 12, fig. 1.
Chenu, Conchyl. Unio, pl. 8, fig. 5.

compressissimus, *Lea*, 1845, x. 81, 8, 23. Synopsis, 24.

Conradicus, *Lea*, 1834, Synopsis, 21, v. 63, 9, 2.
Chenu, Conchyl. Unio, 87, 47, 3.

contrarius, *Con.*, Journ. Acad. Nat. Sc., i. 276, 37, 7.

constrictus, *Con.*, Monog., pl. 49, fig. 4.
Lea, Synopsis, 29.

Cooperianus, *Lea*, 1834, v. 61, 8, 21, Synopsis 22.

cor, *Con.*, New F. W. Shells, 28, 3, 3.
Lea, Synopsis, 26.

cordatus, *Raf.* (Obovaria,) Ann., v. 46, Poulson's trans. 52.
Con., Monog., 48, 25.
Kust., Chemn. Unio, pl. 13, fig. 1.

creperus, *Lea*, vi. 33, 10, 28, Synopsis, 31.
Chenu, Conchyl. Unio, pl. 23, fig. 5.

crocatus, *Lea*, 1841, Synopsis 27, viii. 238, 22, 52.
Chenu, Conchyl. Unio, pl. 33, fig. 1.

Cumberlandianus, *Lea*, 1838, vi. 25, 7, 19, Synopsis 30.
U. Cumberlandicus, Chenu, pl. 24, fig. 1.
U. glaber ? *Lea*.

cuneolus, *Lea*, 1842, viii. 193, 7, 3, Synopsis 24.
Chenu. Conchyl. Unio, pl. 30, fig. 2.

Unio Cuvierianus, *Lea*, 1852, x. 263, 16, 16, Synopsis 32.
cyphius, *Raf.*, Poulson's Trans. 39, v. 59.
Con. Monog. 113, 63.
U. Æsopus, *Green*, Contributions to Maclurian Lyceum, i. 46, 3.
Lea, Synopsis, 23.
Cylindricus, *Say*, Nicholson's Enc. pl. 4, fig. 3.
U. naviformis, *Lam.*, An. vi. 75, *Desh.* ed. 537.
Elliptio solenoides, *Raf.*, Ann. v. 32, Poulson's trans. 26.
Theliderma cylindrica, *Swains.*, Malac. pl. 271, fig. 54.
U. cylindricus, *Hildreth*, Silliman's Journ. xiv. 283, fig. 13.
Lea, Synopsis, 23.
Cyrenoides, *Phillipi*, Conchyl. 1848, 11, 5, 1.
Lea, Synopsis, 25.
dactylus, *Lea*, 1841, viii. 196, 7, 7, Synopsis 36.
Chenu, Conchyl. Unio, pl. 30, fig. 5.
Dariensis, *Lea*, 1841, viii. 246, 26, 61, Synopsis 33.
Chenu, Conchyl. Unio, pl. 33, fig. 6.
decisus, *Lea*, 1832, iv. 92, 12, 23, Synopsis 26.
Con. Monog. 3, 2, 6.
Kust. Chem. Unio pl. 7, fig. 3.
Chenu. Conch. Unio pl. 18, fig. 3.
Fer. Guerin's Mag. 28.
declivis, *Say.*, Transylvania Journ., Dec. 1831, iv. 527.
American Conch. pl. 35.
U. geometricus, *Lea*, 1834, v. 38, 4, 10, Synopsis 33.
Desh. Lam. An. sans Vert. vi. 556.
delumbis, *Con.*, New Fresh Water Shells, May, 1834, 35, 5, 3.
U. modioliformis, *Lea*, Aug. 1834, v. 97, 13, 40.
decoratus, *Lea*, 1852, x. 257, 13, 6, Synopsis 19.
dilatatus, *Raf.*, (Elliptio) Ann., v. 31, Poulson's Trans. 25.
Con. Monog. 42, 21.
U. cuprea, *Raf.*, (young) Ann. 38, 81, 8, 9.
U. atroviolacea, *Raf.*, (obliquaria) Ann. v. 55. Poulson's trans. 69.
U. nasutus, *Lam.* not *Say*, An. sans Vert. vi. 538.
Illustrated ed. Cuvier's Regne Animal. Moll. 92, 2.
U. gibbosus, *Barnes*, Sillim. Journ. 1823, vi. 262.
U. arctior ? *Lea*, (young) Synopsis, 38, vi. 10, 4, 10.
Chenu, Conchyl. Unio, 33, 2.
discus, *Lea*, 1838, vi. 74, 18, 57. Synopsis 31,
Chenu, Conchyl. Unio, pl. 19, fig. 6.
dolabræformis, *Lea*, 1838, vi. 103, 24, 113, Synopsis 27.
Chenu, Conchyl. Unio, pl. 23, fig. 6.
*dolabelloides, *Lea*, 1842, viii. 215, 15, 31, Synopsis 35.
Chenu, Conchyl. Unio, pl. 29, fig. 4.
Dorfeuillianus, *Lea*, 1838, vi. 73, 17, 54, Synopsis 22.
Chenu, Conchyl. Unio, pl. 25, fig. 5.
dromas, *Lea*, 1834, v. 70, 10, 29, Synopsis 23.
Con. Monog. 84, 46, 2.
U. caperatus, *Lea*, 1845, x. 75, 5, 14.
Duttonianus, *Lea*, 1841, viii. 236, 22, 50, Synopsis 35.
Chenu. Conchyl. Unio, pl. 32, fig. 4.
Edgarianus, *Lea*, 1841, viii. 214, 15, 30, Synopsis 25.
Chenu. Conchyl. Unio, pl. 29, fig. 5.
Eastbrookianus, *Lea*, 1845, x. 77, 6, 17. Synopsis 40.
exiguus, *Lea*, 1842, viii. 191, 7, 1, Synopsis 27.
Chenu. Conchyl. Unio, pl. 30, fig. 1.

Unio excultus, *Con.*, Monog. 99, 55, 1.
U. declivis, *Lea*, (not *Say*,) Synopsis 33.
famelicus, *Gould.*, Lea, Synopsis 31.
fasciolaris, *Raf.*, Ann. v. 37, Poulson's Trans. 36.
Fer. Guerin's Mag. 1835, 27.
Say. Amer. Conch. Syn. No. 20.
U. phaseolus, *Hildreth*, Sillim. Journ. xiv. 283.
Lea. Synopsis, 38.
U. sinuatus, *Raf.*, (very old) Ann. v. 55.
U. mucronatus, *Barnes*, Sillim. Journ. vi. 266, 13, 13.
U. planulatus, *Lea.* iii. 431, 9, 13.
Chenu. Conchyl. Unio, pl. 13, fig. 1.
U. cuneatus, *Barnes*, (white var.) Fresh Water Shells, Sillim. Journ. note to Hildreth, xiv. 283.
U. phaseolus, *Say.*, Amer. Conch. pl. 22.
U. planulata, *Desh.*, Lam. vi. 549.
U. camelus, *Lea*, (old) 1834, v. 102, 15, 45.
fasciatus, *Ann.*, Poulson's Trans. 28.
Say. Amer. Conch. Syn. of Unio, No. 6.
Fer. Guerin's Mag. 1835, 27.
Con. Monog. 3, 1.
U. Crassus ? *Say*, Nicholson's Encyc. pl. 1, fig. 3.
U. carinatus, *Barnes*, Silliman's Journ. vi. 126.
U. ellipticus, " " 259, 13, 19.
Hildreth, " xiv. 278.
fasciolus, *Raf.*, Ann. v. 33, Poulson's Trans. 28.
U. subangulatus, *Lea*, x. 209, 13, 23.
fatuus, *Lea*, viii. 201, 11, 14, Synopsis, 38.
Chenu. Conchyl. Unio, pl. 31, fig. 4.
Fisherianus, *Lea*, 1838, vi. 8, 4, 8, Synopsis 37.
Chenu. Conchyl. Unio, pl. 20, fig. 4.
U. nasutus, var. *Con.*, not *Say*, Monog. 38, 18, 1.
flavescens, *Lea*, 1845, x. 72, 3, 9, Synopsis 27.
flavus, *Raf.*, Ann. v. 39, Poulson's Trans. 38.
Con. Monog. 74, 41, 2.
Fer. Guerin's Mag. 1835, 27.
Say. Amer. Conch. Syn., No. 22.
U. rubiginosus, *Lea*, 1832, iii. 427, 8, 10, Synopsis 24.
Chenu, Conchyl. Unio, pl. 13, fig. 4.
flexuosus, *Raf.* Ann. v. 40, Poulson's Trans. 41.
Con. Monog. 8, 4, 2.
Say. Amer. Conch. Syn., No. 27.
U. foliatus, *Hildreth*, Sillim. Journ. xiv. 284, 16.
Lea. Synopsis, 20.
Floridensis, *Lea*, 1852, x. 274, 21, 31, Synopsis 39.
folliculatus, *Lea*, 1838, vi. 38, 11, 33, Synopsis 35.
Chenu, Conchyl. Unio, pl. 23, fig. 4.
Forbesianus, *Lea*, 1852, x. 264, 16, 17, Synopsis 24.
U. congaræus ? *Lea.*
Foremanianus, *Lea*, 1841, viii. 247, 27, 64, Synopsis, 23.
Chenu, Conchyl. Unio, pl. 26, fig. 1.
fragosus, *Con.*, Monog. 12, 6, 2.
Lea, Synopsis, 22.
fraternus, *Lea*, 1852, x. 263, 16, 15, Synopsis, 32.
fulgidus, *Lea*, 1845, x. 73, 4, 10, Synopsis, 25.

Unio furvus, *Con.*, New F. W. Shells, 39, 6, 3.
Lea, Synopsis, 40.
U. Hanleyanus ? x. 279, 23, 37.
U. Troschelianus ? x. 286, 23, 39.
fuliginosus, *Lea*, 1845, x. 280, 23, 37, Synopsis, 33.
fuscatus, *Lea*, 1846, ix. 277, 40, 4, Synopsis, 30.
Geddingsianus, *Lea*, 1841, viii. 202, 11, 15, Synopsis 33.
Chenu. Conchyl. Unio, pl. 31, fig. 3.
Georgianus, *Lea*, 1841, viii. 235, 21, 49. Synopsis 27.
Chenu. Conchyl. Unio, pl. 32, fig. 3.
*gibber, *Lea*, vi. 35, 10, 30. Synopsis, 24.
Chenu. Conchyl. Unio, pl. 23, fig. 2.
Gibbesianus, *Lea*, 1852, x. 254, 12, 2, Synopsis 33.
*glaber, *Lea*, 1838, vi. 34, 10, 29, Synopsis 31.
Chenu. Conchyl. Unio, pl. 24, fig. 3.
glans, *Lea*, 1832, iv. 82, 8, 12, Synopsis 31.
Chenu. Conchyl. Unio, pl. 8, fig. 9.
U. Brumbyanus, *Lea*, 1841, viii. 245, 26, 62.
Gouldii, *Lea*, 1845, x. 76, 6, 16, Synopsis 29.
*graniferus, *Lea*, vi. 69, 19, 60, Synopsis 22.
Chenu. Conchyl. Unio, pl. 25, fig. 3.
Greenii, *Con.*, New Fresh Water Shells, 1834. 32, 4, 1.
Monog. 69, 38, 2.
Lea, Synopsis, 27.
U. simplex, *Lea*, 1845, x. 76, 5, 15, Synopsis 27.
Griffithianus, *Lea*, 1834, v. 103, 15, 46, Synopsis 33.
Haleianus, *Lea*, 1842, viii. 247, 27, 63, Synopsis 31.
Chenu. Conchyl. Unio, pl. 26, fig. 6.
Hayesianus, *Lea*, 1834, v. 35, 3, 7, Synopsis 26.
hebes, *Lea*, 1852, x. 267, 18, 21, Synopsis 26.
heterodon, *Lea*, 1833, iii. 428, 8, 11, Synopsis 24.
Con. Monog. 90, 49, 3.
Fer. Guerin's Mag., 1835, 26.
Chenu. Conchyl. Unio, pl. 16, fig. 2.
Holstonensis, *Lea*, 1841, viii. 212, 15, 27, Synopsis 25.
Chenu. Conchyl. Unio, pl. 32, fig. 1.
hyalinus, *Lea*, 1845, x. 69, 2, 4, Synopsis 39.
Hydianus, *Lea*, 1838, vi. 14, 6, 14, Synopsis, 28.
Chenu, Conchyl. Unio, pl. 17, fig. 3.
U. Claibornensis ? *Lea*.
icterinus, *Con*. New Fresh Water Shells, May 1834, 41, 6, 5.
Monog. 39, 18, 2.
U. fulvus, *Lea*, Aug. 1834, v. 96, 13, 39.
ineptus, *Lea*, 1852, x. 261, 15, 12, Synopsis, 31.
*infucatus, *Con*. New Fresh Water Shells, 45, 3, 2.
Lea, Synopsis, 20.
U. securiformis ? *Con*.
intermedius, *Con*. Monog. 63, 35, 1.
Lea, Synopsis, 22.
interruptus, *Raf*. Ann. v. 36, Poulson's trans. 33.
Con. Monog. 88, 48.
Fer. Guerin, Mag. 28.
Say, Amer. Conch. syn. No. 26.
U. brevidens, *Lea*, vi. 15, 6, 15, Synopsis, 32.
Chenu, Conchyl. Unio, pl. 8, fig. 6.

Unio Jayensis, *Lea,* 1838, vi. 28, 9, 23, Synopsis, 37.
Chenu, Conchyl. Unio, pl. 22, 4.

*jejunus, *Lea,* 1838, vi. 9, 4, 9, Synopsis, 32.

Keinerianus, *Lea,* (Kienerianus ?) 1852, x. 281, 23, 40, Synopsis, 22.

Kirtlandianus, *Lea,* 1834, v. 98, 14, 41, Synopsis, 35.

Kleinianus, *Lea,* 1852, x. 265, 17, 18, Synopsis, 20.

lanceolatus, *Lea,* 1832, iii. 266, 3, 2. Synopsis, 36.
Con. Monog. 32, 14, 2.
Chenu, Conchyl. Unio, pl. 8, fig. 1.

lapillus, *Say,* Trans. Journ. 1831, iv. 528, Amer. Conch. 41.
Con. Monog. 54, 29, 2.
U. fabalis, *Lea,* 1832, iv. 96, 10, 16, Synopsis, 31.
Chenu, Conchyl. Unio, pl. 8, fig. 4.

lævigatus, *Raf.* Ann. (Elliptio) v. 50, 80, 11, 12, 13, Poulson's trans. 24.
U. lens, *Lea,* 1832, iv. 80, 8, 10. Synopsis, 34.
Chenu, Conchyl. Unio, pl. 30, fig. 4.

latiradiatus, *Con.,* Monog. 96, 53.
U. interruptus, *Lea,* 1838. vi. 15. 6, 15. Synopsis, 27.
Chenu, Conchyl. Unio, pl. 17, fig. 4.

lazarus, *Lea,* 1852, x. 259, 14, 9, Synopsis, 39.

Lecontianus, *Lea,* 1838, vi. 40, 12, 35. Synopsis, 26.
Chenu, Conchyl. Unio, pl. 24, fig. 6.

lenior, *Lea,* 1841, viii. 204, 12, 18. Synopsis, 38.
Chenu, Conchyl. Unio, pl. 27, fig. 4.

Leseurianus, *Lea,* 1842, viii. 195, 8, 6. Synopsis, 35.
Chenu, Conchyl. Unio, pl. 30, fig. 4.

lineatus, *Lea,* 1841, viii. 206, 12, 20, Synopsis, 27.
Chenu, Conchyl. Unio, pl. 28, fig. 1.

lienosus, *Con.,* Sillim. Journ. xxv. 339, 1, 4; Monog. 91, 49, 4.
Lea, Synopsis, 29.
U. obscurus, *Lea,* vi. 7, 3, 7.
Chenu, Conchyl. Unio, pl. 17, fig. 1.

ligamentinus, *Lam.* Ann. sans Vert. Desh. ed. vi. 533.
U. fasciolus, *Con.* (not *Raf.*) Monog. 26, 11, 2.
U. multiradiatus, *Lea,* 1832, iii. 48, 9, 15, Synopsis, 27.
Chenu, Conchyl. Unio, pl. 13, fig. 2.

limatulus, *Con.* Journ. Acad. Nat. Sc. 2d ser. 1849, i. 276, 37, 9.
Lea, Synopsis, 32.
U. Tuomeyi, *Lea,* 1852, x. 256, 13, 4. Synopsis, 33.

lineolatus, *Raf.* (obliquaria) Ann. 37, Poulson's trans. 35.
Say, American Conch. pl. 68.
Synonym. of Unio, No. 18.
Fer. Guerin's Mag. 1835, 28.
U. depressa, *Raf.* (not *Lam.*) Ann. v.
U. securis, *Lea,* 1832, iii. 437, 11, 17. Synopsis, 24.
Chenu, Conchyl. Unio, pl. 16, fig. 4.

luridus, *Lea,* x. 273, 20, 29. Synopsis, 30.

luteolus, *Lam. Desh.* An. sans Vert. vi. 544.
Dekay, Zool. of New York, 190, 20, 241.
Lea, Synopsis, 28.
U. siliquoideus, *Con.* Monog. 22, 10, 1.
Fer. Guerin's Mag. 1835, 27.
U. siliquoideus, *Barnes,* Sillim. Journ. vi. 267.
U. inflatus, ib. ib. 267.
Lampsilis siliquoideus, *Stimpson,* Shells of New England, 14.

Unio lugubris, *Lea*, vi. 30, 9, 25, Synopsis, 38.
Chenu, Conchyl. Unio, pl. 20, fig. 3.
maculatus, *Con.* New Fresh Water Shells, May, 1834, 30, 4, 4.
Lea, Synopsis, 24.
U. Ravenelianus, *Lea*, Aug. 1834, v. 32, 3, 5.
Masoni, *Con.* Monog. 28, 12, 2.
Lea, Synopsis, 34.
Kust. Chem. Unio, pl. 5, fig. 6.
mœstus, *Lea*, 1841, viii. 244, 26, 60. Synopsis, 31.
Chenu, Conchyl. Unio, pl. 28, fig. 3.
merus, *Lea*, 1852, x. 260, 15, 10. Synopsis, 33.
Menkianus, *Lea*, 1838, vi. 76, 19, 59, Synopsis, 27.
Chenu, Conchyl. Unio, pl. 19, fig. 4.
Metallicus, *Say*, Dissem. 1830.
Amer. Conch. Synonym. of Unio, No. 51.
U. cuprinus, *Lea*, 1834, iv. 94, 12, 24. Synopsis, 38.
Chenu, Conchyl. Unio, pl. 11, fig. 3.
metanever, *Raf.* Ann. v. 39. Poulson's Trans. 39.
Fer., Guerin's Mag. 1835, 27.
U. metanevrus, *Say*, Amer. Conch. Synonym. of Unio, 24.
Con., Monog. 10, 5, 2.
Kust. Chemn. Unio, pl. 10, fig. 4.
U. nodosus, *Barnes*, Sillim. Journ. vi. 124, 6, 7.
U. rugosus, (?) ib. ib. vi. 126, 8, 9.
U. metanever, *Lea*, Synopsis, 22.
minor, *Lea*, 1846, ix. 276, 39, 2. Synopsis, 31.
Mississipiensis, *Con.*, Journ. Acad. Nat. Sc. ii. 277, 38, 11.
Lea, Synopsis, 29.
Mortoni, *Con.*, Monog. Dec. 1835, 11, 6, 1.
Kust. Chemn. Conchyl. Unio, pl. 11. fig. 1.
U. turgidus, *Lea*, 1837, vi. 11, 5, 11.
Chenu, Conchyl. Unio, pl. 25, fig. 1.
Mühlfeldianus, *Lea*, 1838, vi. 41, 12, 36. Synopsis, 30.
Chenu, Conchyl. Unio, pl. 17, fig. 5.
Monroensis, *Lea*, 1841, ix. 279, 41, 8. Synopsis, 29.
Moussianus, *Lea*, 1852, x. 268, 18, 22. Synopsis, 29.
Nashvillianus, *Lea*, 1834, v. 100, 14, 43. Synopsis, 29.
nasutus, *Say*, Nicholson's Ency. article Conch. pl. 4, fig. 1.
Lister's Conch., t. 151, fig. 6.
Con. Monog. 38, 18, 1.
Gould, Invert. of Mass. 109.
Dekay, Zool. of New York, 191, 20, 239.
Lea, Synopsis, 37.
Mya nasuta, *Wood.*, Index Test. Sup. pl. 1, fig. 4.
U. rostratus, *Valenc.* Humb. and Bonpl., ii. 223, 53, 3.
Eurinea nasuta, *Agas. Stimpson's* Shells of New England, 13.
*nebulosus, *Con.* New Fresh Water Shells, 28, 3, 7.
neglectus, *Lea*, 1846, ix. 280, 42, 10. Synopsis, 33.
nexus, *Say*, Transyl. Journ. 1831, fv. 527.
Amer. Conch. pl. 51.
Con. Monog. 68, 38, 1.
Fer. Guerin's Mag. 1835, 28.
U. arcæformis, *Lea*, 1832, iv. 116, 17, 44. Synopsis, 13.
Chenu, Conchyl. Unio, pl. 12, fig. 3.

Unio nervosus, *Raf.* Ann. v. 30. Poulson's Trans. 22.
Say, Amer. Conch. Synonym. of Unio, No. 6.
U. zigzag, *Lea*, iii. 440, 12, 19. Synopsis, 24.
U. Donaciformis, iii. 267, 4, 3. Synopsis, 24.

nigellus, *Lea*, x. 283, 24, 42. Synopsis, 30.

niger, *Raf.* Ann. v. 25. (Elliptio,) Poulson's Trans. 15.
Con. Monog. 49, 26.
Fer. Guerin's Mag. 1835, 27.
Lister's Conch. pl. 150, fig. 5.
U. incrassatus, *Lea*, 1842, viii. 217, 16, 34. Synopsis, 24.
Chenu, Conchyl. Unio, pl. 31, fig. 5.
U. gibber, (?) *Lea*.

nigerrimus, *Lea*, 1852, x. 268, 18, 23. Synopsis, 31.

nigrinus, *Lea*, x. 284, 24, 44, Synopsis, 39.

nitens, *Lea*, viii. 205, 12, 19. Synopsis, 29.
Chenu, Conchyl. Unio, pl. 28, fig. 5.

nodiferus, *Con.*, (*g*) Journ. Acad. Nat. Sc. second ser. i. 277, 38, 4, 8.
U. prasinus, *Lea*, (not *Con.*) Synopsis, 22.

nodulatus, *Raf.* Ann. v. 41, 81, 17, 18. Poulson's Trans. 42.
Say, Amer. Conch. Synonym. of Unio, No. 6.
Fer., Guerin's Mag. 1835, 28.
U. pustulatus, *Lea*, 1832, iv. 79, 7, 9. Synopsis, 22.
Chenu, Conchyl. Unio, pl. 15, fig. 8.

notatus, *Lea*, 1838, vi. 28, 8, 22, Synopsis, 29.

Novi-Eboraci, *Lea*, 1838, vi. 104, 24, 114, Synopsis, 27.
Dekay, Zool. of New York, 194, 20, 240.
Chenu, Conchyl. Unio, pl. 19, fig. 5.

nucleopsis, *Con.*, Journ. Acad. Nat. Sc. 2d ser. i. 276, 37, 8.
Lea, Synopsis, 35.

nexus, *Say*, Transylvania Journ. 1831, iv. 527. Amer. Conch. 51.
Con. Monog. 68, 38, 1.
Ferussac, Guerin's p. Mag. 28.
U. arcæformis, *Lea*, 1832, iv. 116, 17, 44, Synopsis, 23.

notatus, *Lea*, 1838, vi. 28, 8, 22, Synopsis, 29.
Chenu, Conchyl. Unio, pl. 21, fig. 3.
U. simus, Lea, vi. 26, 8, 20.
Chenu, Conchyl. Unio, pl. 21, fig. 4.

obliquus, *Lam.* An. sans Vert. vi. 72.
Con. Monog. 77, 43, 2.
U. obliquus, *Fer.* Guerin's Mag. 1835.
U. ebenus, *Lea*, 1832, iv. 84, 9, 14. Synopsis, 35
Chenu, Conchyl. Unio, pl. 15, fig. 7.
U. undatus, *Desh.* (not *Barnes*) Desh. ed. of Lam. vi. 534.
U. mytiloides, (?) *Swain.* (not *Raf.*) 43, Malac. 270, fig. 53.

obliquatus, *Raf.* (obliquaria) Ann. v. Poulson's Trans. 46.
Say, Amer. Conch. Synonym of Unio, No. 33.
U. ridibundus, *Say*, Disseminator.
U. sulcatus, *Lea*, iii. 430, 8, 12, Synopsis, 26.
Chenu, Conchyl. Unio, pl. 13, fig. 3.

obovalis, *Raf.* v. 45, Poulson's Trans. 49.
U. solidus, *Lea*, vi. 13, 5, 13, Synopsis, 25.
Chenu, Conchyl. Unio, pl. 25, fig. 2.

*obtusus, *Lea*, viii. 201, 11, 13, Synopsis, 39.
Chenu, Conchyl. Unio, pl. 31, fig. 2.

occidentalis, *Con.* Monog. 64, 36, 1.
Lea, Synopsis, 33.

Unio ochraceus, *Say*, (*h*) Nicholson's Encyclopedia, iv. 4, 2, 8.
Pectunculus fluviatilus, *List*. Conch. pl. 157, fig. 12.
Mytilus fluviatilus, *Gmel*. Dillwyn Cat. 316.
Symphynota ochracea, *Lea*, iii. 69.
U. ochraceus, *Con*. Monog. 37, 17, 2.
Gould, Invert. of Mass. 112, 74.
Dekay, Zool. of New York, 193, 19, 137, 138.
U. rosaceus, (?) *Con*. (not *Dekay*) Jour. Ac. Nat. Sc. 2d ser. 275, 37, 5.

Olivarius, *Raf*. Ann. v. Poulson's Trans. 28.
Fer. Guerin's Mag. 1835, 28.
U. elllpsis, *Lea*, iii. 268, 4, 4. Synopsis, 26.
Chenu, Conchyl. Unio, pl. 18, fig. 1.

Ogeecheensis, *Con*. Journ. Acad. Nat. Sc. 2d ser. i. 275, 37, 3.

oratus, *Con*. Jour. Acad. Nat. Sc. 2d ser. 276, 37, 6.

orbiculatus, *Hild*. 1828, Sillim. Journ. xiv. 284, fig. 15.
Lea, Synopsis, 28.
U. abruptus, *Say*, Amer. Conch. pl. 17.
U. crassus, *Con*. Monog. 34, 16.

ovatus, *Say*, Nicholson's Encyclopedia, iv. 7, 2.
Lam. Anim. sans Vert. vi. 75.
Con. Monog. 4, 2.
Fer. Guerin's Mag. 1835, 26.
Kust. Chemn. Unio, 22, 3, 2.
Lea, Synopsis, 24.
U. ventricosus, *Desh*. (not *Barnes*), Desh. ed. of Lam. vi. 538.
U. subovatus, ib. (not *Lea*.)
U. occidens, (?) ib. ib. 528.

oviformis, *Con*., New Fresh Water Shells, 46, 3, 6.
Lea, Synopsis, 26.

pallescens, *Lea*, 1845, x. 79, 7, 20, Synopsis, 27.

paliatus, *Lea*, 1845, x. 79, 7, 20, Synopsis, 33.

paludicolor, *Gould*, Proceed. Bost. S. N. H. ii. 63.
Lea, Synopsis, 33.

papyraceus, *Gould*, Proceed. Bost. S. N. H. ii. 53.
Lea, Syuopsis, 38.

parvus, *Barnes*, Sillim. Journ. vi. 174.
Con. Monog. 20, 9, 1.
Philippi, Conchyl. 19, 1, 2.
Lea, Synopsis, 31.

paulus, *Lea*, viii. 213, 15, 29, Synopsis, 31.
Chenu, Conchyl. Unio, pl. 27, fig. 5.

pectorosus, *Con*. New Fresh Water Shells, May, 1834, 37, 6, 1.
Monog. 25, 11, 1.
Kust. Chemn. Unio, pl. 4, fig. 2.
U. perdix, *Lea*, Aug. 1834, v. 72, 11, 31, Synopsis, 26.
U. biangulatus, *Lea*, viii. 197, 9, 8.

pellucidus, *Lea*, 1845, x. 70, 2, 6, Synopsis, 39.

penitus, *Con*. New Fresh Water Shells, 33, 5, 1.
Lea, Synopsis, 24.

perovatus, Sillim. Journ. xxv. 338, 1, 3.
Con. New Fresh Water Shells, 47, 2, 3.
Lea, Synopsis, 27.
U. nux, *Lea*, x. 283, 24, 43.

perovalis, *Con*. New Fresh Water Shells, 43, 2, 2.
Lea, Synopsis, 27.

pernodosus, *Lea*, 1845, x. 71, 3, 8, Synopsis,

Unio pectitus, *Con.*, Journ. Acad. Nat. Sc. iii. 2d series.
personatus, *Say*, (female) Disseminator, 1829, 309.
Con. Monog. 47, 24.
Kust. Chemn. Unio, pl. 10, fig. 1.
U. capillaris, *Lea*, 1834, v. 29, 2, 2, Synopsis, 35.
U. pileus, *Lea*, (male) 1832, iv. 119, 18, 47, Synopsis, 24.
Chenu, Conchyl. Unio, pl. 15, fig. 2.
perstriatus, *Lea*, 1852, x. 255, 12, 3, Synopsis, 36.
Phillipsii, *Con.* Monog. 9, 5, 1.
Lea, Synopsis, 22.
Kust. Chemn. Unio, pl. 10, fig. 3.
pictus, *Lea*, 1834, v. 73, 11, 32, Synopsis, 27.
pilaris, *Lea*, viii. 209, 14, 24, Synopsis, 35.
Chenu, Conchyl. Unio, pl. 29, fig. 3.
placitus, *Lea*, 1852, x. 279, 23, 38, Synopsis, 29.
planilateris, *Con.* Monog. 103, 57, 1.
plenus, *Lea*, 1842, viii. 211, 14, 26, Synopsis, 25.
plexus, *Con.* (*j*) Monog. 1836, 89, 49, 1.
U. pliciferus, *Lea*, 1838, vi. 61, 17, 53, Synopsis, 20.
Chenu, Conchyl. Unio, pl. 22, fig. 5.
U. subtrapezius, *Philippi*, Conchyl. 1847, 12, 5, 2.
U. carbonarius, *Lea*, (old shell) vi. 37, 11, 32, Synopsis, 20.
Chenu, Conchyl. Unio, pl. 23, fig. 1.
Powellii, *Lea*, 1852, x. 270, 19, 25, Synopsis, 28.
politus, *Say*, Amer. Conch. Synonym. of Unio, No. 6.
U. brevialis, ? *Lam.* An. sans Vert. 1819, vi. 73.
U. olivarius, var. 2, *Raf.*
U. brevialis, *Crouch*, Illustrated Lamarck, 1827, 16, 9, 3.
U. subrotundus, *Lea*, (not *Raf.*) 1832, iv. 117, 18, 45, Synopsis, 26.
Chenu, Conchyl. Unio, pl. 15, fig. 1.
U. politus, *Con.* Monog. 67, 37, 2.
Prevostianus, *Lea*, 1852, x. 269, 19, 24, Synopsis, 29.
prasinus, *Con.* (*k*) New Fresh Water Shells, May, 1834, 44.
Monog. 79, 44, 2.
U. Schoolcraftensis, *Lea*, Aug. 1834, v. 37, 3, 9.
U. nodiferus, *Lea*, (not *Con.*) Synopsis, 22.
productus, *Con.*, Monog. 44.
Kust. Chemn. Unio, pl. 16, fig. 2.
Lea, Synopsis, 37.
proximus, *Lea*, 1852, x. 271, 20, 27, Synopsis, 29.
pullus, *Con.* Monog. 100, 55, 2.
Lea, Synopsis, 31.
*pulvinulus, *Lea*, 1845, x. 81, 8, 24, Synopsis, 26.
pumilis, *Lea*, 1838, vi. 23, 7, 17, Synopsis, 24.
Chenu, Conchyl. Unio, pl. 19, fig. 1.
puniceus, *Haldeman*, Journ. Acad. Nat. Sc. viii. 201.
purpuratus, *Lam.* (*l*) *Desh.* An. sans Vert. vi. 533.
Fer. Guerin's Mag. 1835, 26.
U. ater, *Lea*, iii. 426, 7, 9.
U. lugubris, *Say*, Amer. Conch. pl. 43.
U. atra, *Desh.* Enc. Method. Vers. ii. 528.
U. purpuratus, *Lea*, Synopsis, 38.
Mya ventricosa, *Soland. Humph.* Catalogue, No. 1084, 59.
Chenu, Conchyl. Unio, pl. 10, fig. 1.

Unio purpuriatus, *Say*, Disseminator, 1829.
U. Medellinus, *Lea*, 1838, vi. 39, 12, 34, Synopsis, 29.
Chenu, Conchyl. Unio, pl. 17, fig. 6.

pusillus, *Lea*, viii. 220, 18, 36, Synopsis, 31.
Chenu, Conchyl. Unio, pl. 32, fig. 5.

pygmœus, *Lea*, x. 262, 15, 14, Synopsis, 31.

quadrulus, (*m*) *Raf.* Ann. v. 41, Poulson's Translation, 42.
Say, Amer. Conch. pl. 53.
Con. Monog. 112, 62.
U. asperrimus, *Lea*, iv. 71, 5, 3, Synopsis, 21.
Chenu, Conchyl. Unio, pl. 9, fig. 2.
U. lachrymosus, *Lea*, iii. 272, 6, 8, (young) pl. 15, fig. 6, Synop. 21.
Chenu, Conchyl. Unio, pl. 15, fig. 6.

radiatus, *Lam. Desh.* An. sans Vert. vi. 535.
Mya radiata, *Gmel.* vide Lam.
Mya, *Schrot.* Eil. 614.
Mya radiata, *Dillwyn*, Cat. i. 51.
Mya pictorum tenuis, *Chemn.* vi. 23, 2, 7.
U. Virginiana, *Lam. Desh.* An. sans Vert. vi. 544.
Delassert, Recueil de Coquilles, pl. 13, fig. 4.
Mya oblongata, *Wood.* Supplement to Index Test. pl. 5, fig. 2.
Conchyl. pl. 12, fig. 4.
U. ochraceus, *Desh.* (not *Say*,) ed. Lam. vi. 536.
U. radiatus, *Con.* Monog. 24, 10, 2.
Lea, Synopsis, 29.
Dekay, Zool. of New York, 189, 18, 236.
Gould, Invert. of Mass. 110.
Lampsilis radiata, *Agas.* MSS. *Stimpson's* Shells of New Eng. 13.

*Rangianus, *Lea*, 1838, vi. 85, 18, 56, Synopsis, 25.
Chenu, Conchyl. Unio, pl. 24, fig. 5.

Raveneli, *Con.* New Fresh Water Shells, May, 1834, 39, 6, 4.
U. confertus, *Lea*, Aug. 1834, v. 103, 16, 47, Synopsis, 30.
U. Watereensis, *Lea*, Aug. 1838, v. i. 130, note, Synopsis, 33.

rectus, *Lam.* An. sans Vert. vi. 74, Desh. ed. 537.
Con. Monog. 33, 15.
U. latissima, (Elliptio,) *Raf.* Ann. v. 31, Poulson's Trans. 25.
U. prælongus, *Barnes*, Sillim. Journ. vi. 261.
U. rectus, *Kust.* Chemn. Conchyl. 35, 6, 1.
Lea, Synopsis, 35.
Eurinea prælonga, *Agas.* MSS. *Stimpson's* Shells of New Eng. 13.

Reevianus, *Lea*, 1852, x. 272, 20, 28, Synopsis, 28.

reflexus, *Raf.* Ann. v. 40, Poulson's Trans. 40.
Con. Monog. 7, 4, 1.
Fer. Guerin's Mag. 1835, 28.
Say, Synonym. of Unio, No. 25.
Kust. Chemn. Unio, pl. 11, fig. 2.
U. cornutus, *Barnes*, Sillim. Journ. vi. 122.
Lea, Synopsis, 22.

regularis, *Lea*, 1841, viii. 243, 25, 59, Synopsis, 29.
Chenu, Conchyl. Unio, pl. 33, fig. 3.

retusus, *Lam. Desh.* An. sans Vert. vi. 534.
Fer. Guerin's Mag. 1835, 28.
Say, Amer. Conch. Synonym. of Unio, No. 26.
Con. Monog. 1, 19, 8.
Lea, Synopsis, 35.
U. torsa, *Raf.* Ann. v. 45, 82, 1, 2, 3, Poulson's Trans. 40.
Kust. Chemn. Conchyl. Unio, pl. 13, fig. 2.
U. obtusa, *Cuv.* Regne Animal, illust. edit. pl. 92, fig. 1.

Unio rivularis, *Con.* Journ. Acad. Nat. Sc. 1853, iii. 2d series.
U. declivis, *Con.* (not *Say*) Monog. 45, 23, 1.
Kust. Chemn. Unio, pl. 14, fig. 1.
Lea, Synopsis, 33.

*Roanokensis, *Lea,* 1838, vi. 27, 8, 21, Synopsis, 32.

rosaceus, *Dekay,* Zool. of New York, 192, 39, 355, 356, and pl. 40, fig. 357.

rotundatus, *Lam.* An. sans Vert. Desh. ed. vi. 538.
U. suborbiculata, *Lam. Desh.* ib. 546.
decorticata, *Raf.* Ann. v. 36, Poulson's Trans. 33.
glebulus, *Say,* Amer. Conch. pl. 34.
subglobosus, *Lea,* v. 30, 2, 3.
rotundatus, *Lea,* Synopsis, 34.

rubellus, *Con.* New Fresh Water Shells, 38, 6, 2.
Lea, Synopsis, 34.

Ruber, *Raf.* v. 48, Poulson's Trans. 55.
U. pyramidatus, *Lea,* iv. 109, 16, 39, Synopsis, 25.
Chenu, Conchyl. Unio, pl. 16, fig. 5.
U. coccineus, *Jay,* (not *Hildreth,*) Catalogue, 66.
rudis, *Con.* Monog. 76, 43, 1.
U. Ravenelianus, *Lea,* v. 32, 3, 5, Synopsis, 26.
rufusculus, *Lea,* 1852, x. 258, 14, 7, Synopsis, 33.
Rumphianus, *Lea,* 1852, x. 276, 22, 34.
sagittiformis, *Lea,* 1852, x. 277, 22, 35, Synopsis, 37.
Sapotalensis, *Lea,* viii. 233, 21, 47, Synopsis, 29.
Chenu, Conchyl. Unio, pl. 33, fig. 4.
saxeus, *Con.* Monography of North American Unionidæ, 109, 60, 1.
satur, *Lea,* 1852, x. 265, 17, 19, Synopsis, 24.
Lea, Synopsis, 27.
*securiformis, *Con.* Journ. A. N. S. i. 275, 37, 1.

semigranosus, *V. d. Busch.*
Phillippi, Conchyl. Unio, 1, 1, 1, 2, 3.
Lea, Synopsis, 20.
Shepardianus, *Lea,* 1834, v. 95, 13, 38, Synopsis, 35.
Con. Monog. 70, 39.
simus, *Lea,* 1838, vi. 26, 8, 20, Synopsis, 31.
sintoxia,* *Raf.* v. 44, Poulson's Trans. v. 48.
sordidus, *Lea,* 1852, x. 254, 12, 1. Synopsis, 33.
Sowerbianus, *Lea,* 1834, v. 68, 10, 28, Synopsis, 25.
Con. Monog. 66, 37, 1.
sparsus, *Lea,* 1841, viii. 242, 25, 58, Synopsis, 22.
Chenu, Conchyl. Unio, pl. 26, fig. 2.
spatulatus, *Lea,* 1845, x. 80, 8, 22.
spinosus, *Lea,* vi. 57, 16, 50, Synopsis, 23.
Chenu, Conchyl. Unio, pl. 22, fig. 6.
splendidus, *Lea,* vi. 70, 19, 61, Synopsis, 27.
Chenu, Conchyl. Unio, pl. 17, fig. 7.
stagnalis, *Con.* Journ. Acad. Nat. Sc. 2d ser. i. 275, 37, 2.
Lea, Synopsis, 27.

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* The specimen in Mr. Poulson's cabinet labelled *sintoxia* by Rafinesque is a large compressed shell, similar in outline to *U. coccineus.* Length 3¼ inches; height 3 inches.

Unio stapes, *Lea*, 1832, iv. 77, 7, 8, Synopsis, 22.
Con. Monog. 83, 46, 1.
Fer. Guerin's Mag. 1835, 28.
Chenu, Conchyl. Unio, pl. 15, fig. 5.

stegarius, *Raf.* Ann. v. 46, Poulson's Trans. 51.
Con. Monog. 83, 46, 1.
Fer. Guerin's Mag. 1835, 28.
U. irroratus, *Lea*, 1852, iii. 269, 5, 5, Synopsis, 22.
Chenu, Conchyl. Unio, pl. 10, fig. 3.
Stewardsonii, *Lea*, 1852, x. 278, 23, 36, Synopsis, 20.
Stonensis, *Lea*, viii. 195, 8, 5, Synopsis, 27.
stramineus, *Con.* Sillim. Journ. xxv. 339, 1, 6.
Monog. 91, 50, 1.
Lea, Synopsis, 28.
striatus, *Lea*, 1841, viii. 203, 12, 16, Synopsis, 26.
strigosus, *Lea*, 1841, viii. 198, 9, 9, Synopsis, 36.
Chenu, Conchyl. Unio, pl. 30, fig. 6.
subinflatus, *Con.* New Fresh Water Shells, Appendix, 1835, 5.
Monog. 97, 54, 1.
U. Hopetonensis ? *Lea*, 1838, vi. 29, 9, 24, Synopsis, 32.
Chenu, Conchyl. Unio, pl. 20, 5.
subplanus, *Con.* Monog. 73, 41, 1.
Lea, Synopsis, 33.
subrotundus, *Raf.* (young) Ann. 42, Poulson's Trans. 44.
Say, Amer. Conch. Synonym. of Unio, No. 32.
Fer. Guerin's Mag. p. 28.
U. striatus, *Raf.* (old) Ann. v. 45, Poulson's Trans. 50.
circulus, *Lea*, iii. 433, 9, 14, Synopsis, 34.
Chenu. Conchyl. Unio, pl. 16, fig. 1.

subtentus, *Say*, Journ. Acad. Nat. Sc. v. 130, Amer. Conch. pl. 15.
Con. Sillim. Jour. xxv. 339, 1, 4, Monog. 85, 47, 1.
Fer. Guerin's Mag. 1835.
Lea, Synopsis, 21.

subrostratus, *Say*, Disseminator, 1830.
U. iris, *Lea*, iii. 439, 11, 18, Synopsis, 38.
Chenu, Conchyl. Unio, pl. 8, fig. 7.

symmetricus, *Lea*, 1845, x. 73, 4, 11, Synopsis, 32.

Tampicoensis, *Lea*, vi. 24, 7, 18, Synopsis, 26.
Chenu, Conchyl. Unio, pl. 21, fig. 5.
tæniatus, *Con.* New Fresh Water Shells, 26, 4, 2.
U. pulcher, *Lea*, vi. 6, 3, 6, Synopsis, 28.
Chenu, Conchyl. Unio, pl. 17, fig. 2.
Taitianus, *Lea*, 39, 4, 11, Synopsis, 25.
Tecomatensis, *Lea*, 1841, viii. 234, 21, 48, Synopsis, 27.
Chenu, Conchyl. Unio, pl. 31, fig. 6.

Tennesseensis, *Lea*, 1842, viii. 199, 10, 11, Synopsis, 27.
Chenu, Conchyl. Unio, pl. 27, fig. 1.
tener, *Lea*, 1842, viii. 198, 10, 10. Synopsis, 28.
Chenu, Conchyl. Unio, pl. 31, fig. 1.

tenerus, *Ravenel*, *Lea*, 1834, v. 63, 9, 2. Synopsis, 39.
U. tenebrosus, *Con.* New Fresh Water Shells, 42, 7, 1.

tetralasmus, *Say*, Amer. Conch. pl. 23.
Lea, Synopsis, 32.

Unio teres, *Raf.* Ann., v. 55, Poulson's trans. 68.
Con. Monog. 52, 28.
Fer. Guerin's Mag. 1835, 27.
Say, Synonym. of Unio, No. 42.
U. Anodontoides, *Lea*, iv. 86, 8, 11, Synopsis, 36.
Chenu, Conchyl. Unio, pl. 14, 3.

trabalis, *Con.* New Fresh Water Shells, Mav, 1834, 27, 3, 5.
Monog., 110, 60, 2.
U. Troostensis, *Lea*, Aug. 1834, v. 71, 10, 30, Synopsis, 25.

trigonus, *Lea*, 1832, iv. 110, 16, 40, Synopsis 25.

tortivus, *Lea*, 1842, viii. 204, 12, 17, Synopsis 24.
Chenu, Conchyl. Unio, pl. 29, fig. 6.

torulosus, *Raf.* (obliquaria) Ann. v. 48, Poulson's Trans. 56.
Fer., Guerin's Mag. 1835, p. 28.
Kust., Chemn. Unio, 28, 4, 3, 4.
Say, Amer. Conch. Synonym. of Unio, No. 40.
U. gibbosus, *Raf.*, *Con.* Monog. 50, 27.
Kust. Chemn. Unio, 28, 4, 3, 4.
U. perplexus, *Lea*, iv. 122, 17, 42, Synopsis, 23.
Chenu, pl. 18, fig. 5.

triqueter, *Raf.* Ann. v. 34, Poulson's Trans. 31.
U. triangularis, *Barnes*, vi. 272, fig. 17.
U. formosus, *Lea*, iv. 111, 16, 41.
Chenu, Conchyl. Unio, pl. 8, fig. 12.
U. triangularis, *Lea*, Synopsis, 22.

truncatus, *Raf.* Ann. v. 35, Poulson's Trans. 31.
Fer. Guerin's Mag. 1835,
Say, Amer. Conch. Synonym. of Unio, No.
U. elegans, *Lea*, iv. 83, 9, 13, Synopsis, 23.
Chenu, Conchyl. Unio, pl. 15, fig. 3.

trossulus, *Lea*, ix. 278, 40, 6, Synopsis, 25.

tuberosus, *Lea*, 1842, viii. 210, 14, 25, Synopsis, 22.
Chenu, pl. 28, fig. 7.

tumescens, *Lea*, 1845, x. 71, 3, 7. Synopsis, 25.

undatus, (*n*) *Barnes*, Sillim. Journ. vi. 121, 4, 4.

unicolor, *Lea*, 1845, x. 74, 4, 12, Synopsis, 34.

utriculus, *Lea*, 1845, x. 69, 1, 3, Synopsis,

Vanuxemiensis, *Lea*, 1838, vi. 36, 11, 31, Synopsis, 29.
Chenu, Conchyl. Unio, pl. 19, fig. 3.

Vaughnianus, *Lea*, vi. 5, 3, 5, Synopsis, 38.
Chenu, Conchyl. Unio, pl. 21, fig. 1.

velatus, *Con.*, 1853, Journ. Acad. Nat. Sc. iii. 2d series.

venustus, *Lea*, 1838, vi. 4, 2, 4, Synopsis, 27.
Chenu. Conchyl. Unio, pl. 22, fig. 1.

verrucosus, *Raf.* Ann. v. 42, Poulson's Trans. 44.
U. tuberculatus, *Barnes*, Sillim. Journ. vi.
Hildreth, Sillim. Jour. xiv. 281, fig. 8. *Lea*, Synopsis, 23.

viridis, (*o*) *Raf.* Ann. v. 27, Poulson's Trans. 19.
Con., Monog., 36, 17, 1.
U. Tappanianus, *Lea*, vi. 62, 17, 55, Synopsis, 39.
Dekay, Zool. of New York, part i. 194, 20, 242.
Chenu, Conchyl. Unio, pl. 20, fig. 2.

Unio vibex, *Con.* New Fresh Water Shells, 31, 4, 3.
Lea, Synopsis, 30.
Whiteanus, *Lea,* 1852, x. 258, 14, 8, Synopsis 33.
Zeiglerianus, *Lea,* 1838 (Zieglerianus ?) vi. 32, 10, 27. Synopsis, 29.
Chenu, Conchyl. Unio, pl. 24, fig. 2.

METAPTERA, *Raf., Agas.*

Metap. alata.
U. alata, *Say,* Nicholson's Encyclopedia, iv. pl. 4, fig. 2.
Lam. Anim. sans Vert. 1819, vi. 76. *Desh.* ed. of Lam. vi. 539.
Symphynota alata, *Lea,* iii. 448. U. alatus, Synopsis, 19.
Barnes, Sillim. Journ. vi. 260.
Con., Monog., 56, 31.
Metaptera megaptera, *Raf.,* Ann. v. 34, 80, 20, Poulson's Trans. 29.
Symphynota alata, *Lea,* iii. 448. U. alatus, Synopsis, 19.
Lymnadia alata, *Swains.* Malac. 265, 48.
U. alatus, *Kust.* Chemn. Unio. 15, 1, 1.
fragilis.*
Elliptio fragilis, *Raf.* Ann. v. 29. Poulson's Trans. 22.
U. fragilis, *Swains.,* Zool. Illust. 1st ser. pl. 171.
U. fragilis, *Say,* Amer. Conch. Syn. No. 6.
Kust. Chemn. Unio, 19, 3, 1.
U. gracilis, *Barnes,* Sillim. Journ. vi. 174.
Symphynota gracilis, *Lea,* iii. 452. U. gracilis, Synopsis, 19.
inflata.
Symphynota inflata, *Lea,* iv. 99, 14, 28.
U. inflatus, *Con.* Monog. 57, 32.
Lea, Synopsis, 19.
Kust. Chem. Unio, 17, 2, 1.
U. Alabamensis, *Con.,* New Fresh Water Shells, p. 67.
Ohiensis.
Lastena Ohiensis, *Raf.* Ann. v. 50, Poulson's Trans. 60.
U. lævissimus, *Lea,* iii. 444, 13, 23, Synopsis, 19.

PLECTOMERUS, *Con.*

Shell subalated, obliquely plicated; cardinal teeth very thick, sulcated, the posterior lobe directed towards the posterior extremity of the shell; posterior muscular impressions scarcely impressed, confluent.

Plect. atromarginatus.
U. atromarginatus, *Lea,* viii. 207, 13, 21, Synopsis, 19.
Chenu, Conchyl. Unio, pl. 28, fig. 6.
Boykianus.
U. Boykianus, *Lea,* viii. 208, 13, 22, Synopsis, 19.
Chenu, Conchyl. Unio, pl. 27, fig. 2.
costatus.
U. costatus, *Raf.* Ann. v. 49, Poulson's Trans. 57.
Con. Monog. 17, 7.
U. undulatus, *Barnes,* Sillim. Journ. vi. 120, pl. 2.
Lea, Synopsis, 20.
U. latecostatus, *Lea,* 1845, x. 68, 1, 2.

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* I have not quoted Stimpson for this species, because he says that the Ohio species is different from the shell usually regarded as the same, which inhabits Lake Champlain, and he refers only to the latter. Rafinesque described the Western shell. As Say's *U. alatus* was found in Lake Erie, I do not know whether Agassiz considers it the same as the Ohio river species, or as that of Lake Champlain.

Plect. crassidens.
U. crassidens,* (*a*) *Lam.*, An. sans Vert. vi. 71.
interruptus, *Say.*, Transylvania Journ., 1831, iv. 525.
Amer. Conch. pl. 33.
trapezoides, *Lea*, 1838, vi. 69, 3, 1, Synopsis, 21.
Chenu, Conchyl. Unio, pl. 28, fig. 6.

Nicklinianus.
U. Nicklinianus, *Lea*, v. 28, 1, 1, Synopsis, 19.

perplicatus, *Con.* Proc. Acad. Nat. Sc. 2d ser. i. 19.
Journ. Acad. Nat. Sc. ii. 276, 38, 2.
U. atrocostatus, *Lea*, Aug. 1845, x. 70, 2, 15, Synopsis, 20.

*plectophorus, *Con.* Journ. Acad. Nat. Sc. i. 2d ser. 277, 38, 7.

plicatus.
U. plicatus, *Say*, Nicholson's Enc., article Conch. iv.
Barnes, Sillim. Journ. vi. 120, 3, 3.
Lea, Synopsis, 20.
U. Peruviana, *Lam.*, An. sans Vert. vi. 71.
Enc. Method. pl. 248, fig. 7.
U. rariplicata, *Lam.*, vi. 71. *Desh.* ed. of Lam. v. 533.
Dombeyanus, *Valenc.*
undulatus, *Desh.* (not *Barnes*) ed. of Lam. vi. 533.
multiplicatus, *Desh.* (not *Lea*) ib. vi. 533.
crassus, *Barnes*, Sillim. Journ. vi. 118, 1, 1.
plicata, *Swains.*, Malac. 271, 54, *e*.
Hippopæus, *Lea*, 1845, x. 68, 1, 1.

Sloatianus.
U. Sloatianus, *Lea*, viii. 217, 16, 33, Synopsis, 21.
Chenu, Conchyl. Unio, pl. 32, fig. 7.
U. plectophorus ? *Con.*

COMPLANARIA, *Swains.*, *Agas.*

Comp. complanata.
Alas. complanata, *Barnes*, Sillim. Journ. vi. 278, 13, 22.
Hild. ibid. xiv. 289.
Symphynota complanata, *Lea*, iii. 448.
U. complanata, *Desh.* ed. of Lam. vi. 559.
Katherina, *Lea*, Synopsis, 42.

costata.
Alasmidonta costata, *Raf.*, Ann. v. 52, 82, 15, Poulson's Trans. 63.
Alasmodonta rugosa, *Barnes*, Sillim. Journ. vi. 278, 13, 21.
Complanaria rugosa, *Agas.* Stimpson's Shells of New Eng. 14.

compressa.
Symphynota compressa, *Lea*, 1832, iii. 450, 12, 22.
U. compressus, *Con.* Monog. 71, 40, 1.
Dekay, Zool. of New York, 191, 21, 245.
Lea, Synopsis, 19.
Complanaria alasmodontina, *Stimpson*, Shells of New Eng. 14.

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* This species is identical with the *interruptus* of Say and *trapezoides* of Lea. The description "antice binis ternisve subsinuosâ," can apply to no other species which could be compared with Say's *interruptus*. This description applies to (*a*) of Lam., which Mr. Lea acknowledges to be his *trapezoides*, and is the type of *crassidens*. How, then, can he set it aside, and take up *b* as the type of that species, especially as it does not agree with the description?

MARGARITANA, *Schumacker.*

Marg. arcuata.
Alasmodonta arcuata, *Barnes*, Sillim. Journ. vi. 277, 12, 20.
Gould, Invert. of Mass. 114, fig. 75.
Dekay, Zool. of New York, 197, 14, 224.
Margaritana margaritifera, *Lea*, (not *Lin.*) Synopsis, 43.
M. arcuata, *Stimpson*, Shells of New England, 15.

falcata, *Gould*.

monodonta.
Unio monodontus, *Say*, Amer. Conch. pl. 6.
Desh. ed. of Lam. An. sans Vert. vi. 553.
Alas. monodonta, *Fer.* Guerin's Mag. 1835, note 8, 31.
U. Soleniformis, *Lea*, iv. 86, 10, 16, Synopsis, 39.
Chenu, Conchyl. Unio, pl. 14, fig. 4.

ALASMODONTA, *Say.*

arcula, *Lea*, 1838, vi. 71, 22, 69, Synopsis, 42.

confragosa, *Say*. Amer. Conch. pl. 21.
U. confragosa, *Desh.* ed. of Lam. vi. 553.
Marg. confragosa, *Lea*, Synopsis, 42.

marginata, *Say*, Journ. Acad. Nat. Sc. i. 459.
Barnes, Sillim. Journ. vi. 279.
U. varicosa, *Lam.* An. sans. Vert. vi. 78, Desh. ed. 543.
Mya rugulosa, *Wood*. Index, Sup. pl. 1, fig. 7.
Margaritana marginata, *Lea*, Synopsis, 42.
Alas. marginata, *Dekay*, Zool. of New York, 196, 14, 226.

truncata, *Say*, MSS. *Gould*, Invert. 117.
Alas. marginata, *Auc.* (Western var.)

LEPTODEA, *Raf.*

Lept. lata, *Raf.*, Ann. v. 51, 82, 17, Poulson's Trans. 61.
U. dehiscens, *Say*, Disseminator, ii. 308.
Amer. Conch. pl. 24.
Desh. ed. of Lam. 554.
U. oriens, *Lea*, v. 4, 6, 5, Synopsis, 43.
U. dehiscens, *Lea*, Synopsis, 43.
Chenu. Conchyl. Unio, pl. 14, fig. 2.
Anodonta lata, *Fer.* Guerin's Mag. 1835, 25.
U. latus, *Say*, Amer. Conch. Syn. of Unio, No. 44.

leptodon, *Raf.*, Ann. v. Poulson's Trans. 21.
U. leptodon, *Say*. Amer. Conch. Syn. of Unio, No. 6.
Fer. Guerin's Mag. 25.
Con., Monog. 59, 33.
U. planus, *Barnes*, Sillim. Journ. vi. 272.
Anodonta purpurascens, *Swain.*, Zool. Illust. 1st ser. iii. pl. 160.
Symphynota tenuissima, *Lea*, iii. 453, 11, 21.
Unio tenuissima, *Lea*, Synopsis, 38.

STROPHITUS, *Raf.* HEMIODON, *Swains.*

argenteus.
Anod. argentea, *Lea*, 223, 19, 41.

Arkansensis.
Anod. Arkansensis, *Lea*, x. 293, 29, 56.

calceolus.
U. calceola, *Lea*, iii. 265, 3, 1.
Desh. ed. of Lam. An. sans Vert. 546.
Margaritana calceola, *Lea*, Synopsis, 43.

Stroph. Curreyanus.
Margaritana Curreyana, *Lea*, viii. 223, 18, 40, Synopsis, 42.
deltoideus.
Marg. deltoidea, *Lea*, vi. 43, 13, 38, Synopsis, 42.
edentulus.
Alas. edentula, *Say*, Disseminator.
Anodonta edentula, *Dekay*, Zool. of New York, 201, 15, 231.
A. edentula, *Lea*, Synopsis, 49.
A. areolata, *Swains.*, Zool. Illust. 2d ser. i. pl. 1.
Etowaosis, *Con.* Proceed. Acad. Nat. Sc. 1849, iv. 154.
fabula.
Marg. fabula, *Lea*, vi. 44, 13, 39, Synopsis, 44.
Hildrethianus.
Marg. Hildrethiana, *Lea*, v. 36, 3, 8. Synopsis, 43.
Holstonia ?
Marg. Holstonia, *Lea*, vi. 42, 13, 37, Synopsis, 44.
minor.
Marg. minor, *Lea*, x. 82, 8, 26, Synopsis, 42.
radiatus, *Con.*
Alas. radiata, Sillim. Journ. xxv. 34, 1, 10.
Marg. radiata, *Lea*, Synopsis, 43.
Ravenelianus.
Marg. Ravenelianus, *Lea*, v. 106, 17, 50, Synopsis, 42.
Shæfferiana.
Anod. Shæfferiana, *Lea*, x. pl. 26, fig. 50.
tetragona.
Anod. tetragona, *Lea*, 1846, x. 82, 8, 25.
unadilla, *Dekay*, Zool. of New York, part i. 199, 15, 228.
undulatus.
Anod. undulata, *Say*, Nicholson's Ency. iv. pl. 3, fig. 6.
Gould, Invert. of Mass. 120.
Anod. rugosa, *Swains.*, Zool. Illust. 1st series, ii. 96.
A. Pennsylvanica, *Lam.* An. sans Vert. vi. 86.
Strophitus undulatus, *Stimp.* Shells of New England, 15.
virgatus, *Con.* Monog. cover of No. 6, June, 1836.
Anod. Wardiana, *Lea*, 1838, vi. 46, 14, 42.

ANODONTA, *Cuvier*, *Lam.*

Anod. angulata, *Lea*, vi. 97, 16, 52.
Benedictensis, *Lea*, vi. 104, 16, 48.
Buchanensis, *Lea*, vi. 47, 16, 43.
Californiensis, *Lea*, x. 286, 25, 47.
cataracta, (*a*) *Say*, Nicholson's Encyc. iv. pl. 3, fig. 4.
Lam. An. sans Vert. vi. 85.
A. fluviatilis, *Lea*, vi. 138, Synopsis,
Gould, Invert. of Mass. 117.
Dekay, Zool. of New York, 203, 18, 234.
Kust. Chemn. Unio, 33, 7, 2.
cognata, *Gould.*
Couperiana, *Lea*, viii. 227, 20, 46.
cylindracea, *Lea*, vi. 45, 13, 40.
decora, *Lea*, vi. 64, 20, 63.
declivis, *Con.* Sillim. Journ., July, 1834, xxv. 341, 1, 11.
A. plana, *Lea*, Aug. 1834, v. 48, 7, 18.

Anod. denigrata, *Lea*, 1852, x. 285, 25, 45.
excurvata, *Dekay*, Zool. of New York, 202, 17, 233.
fragilis, *Lam.* An. sans Vert. vi. 85.
ferruginea, *Lea*, viii. 225, 19, 43.
Ferussaciana, v. 45, 6, 15.
Footiana, *Lea*, viii. 226, 20, 44.
gibbosa, *Say*, Long's Ex. to St. Peter's, 1824, ii. 265. *Lea*, Synopsis, 50.
gigantea, *Lea*. vi. 1, 1, 1.
glauca, *Valen. Lea*, Synopsis, 50.
Delassert, Recueil de Coquilles, pl. 13, fig. 3.

grandis, *Say*, Dissem. 1829, 341.
Lea, Synopsis, 51.
corpulenta, *Cooper*, MSS.

Harpenthis, *Lea*, viii. 224, 19, 42.

imbecilis, *Say*, Dissem. 1829.
incerta, *Lea*, 1834, v. 46, 6, 16.

implicata, *Say*, Dissem. 350.
Gould, Invert. of Mass. 118, 78.
A. Newtonensis, *Lea*, vi. 79. 21, 66.

impura, *Say*, Dissem. 1829. *Lea*, Synopsis, 53.
Linneana, *Lea*, x. 289, 27, 51.
lugubris, *Say*, Disseminator, 1829, 340.
Marryattana, *Lea*, viii. 226, 20, 45.
marginata, (*b*) *Say*, Nicholson's Encyclop. iv. pl. 3. fig. 1.
Nuttalliana, *Lea*, vi. 77, 20, 62.
oblita, *Lea*, 1852, x. 290, 28, 52.
opaca, *Lea*, 1852, x. 285, 25, 46.
Oregonensis, *Lea*, vi. 80, 21, 67.
ovata, *Lea*, vi. 2, 2, 2.
pavonia, *Lea*, vi. 78, 21, 45.
Pepiniana, *Lea*, vi. 96, 16, 51.
plicata, *Hald.* Journ. Acad. Nat. Sc. viii. 202.
salmonia, *Lea*, vi. 45, 14, 41.
Stewartiana, *Lea*, v. 47, 6, 17.
suborbiculata, *Say*, Amer. Conch. pl. 11.
subcylindracea, *Lea*, vi. 106, 24, 117.
subvexa, *Con.*, Sillim. Journ. xxv. 341, 1, 12.
teres, *Con.* New Fresh Water Shells, 47, 7, 2.
virens, *Lea*, x. pl. 28. fig. 53.
Wahlamatensis, *Lea*, vi. 68, 20, 64.

NOTES.

(*a*.) *Unio asper*. Ferussac considered this species and Say's apiculatus the same; but there is a strongly marked difference in the arrangement of the tubercles and in the form of the shells posteriorly. (Guerin's Mag. 1835.)

(*b*.) *U. cariosus*. In my Monograph I followed Ferussac in referring *U. luteola*, Lam., to this species, but his description does not apply. It very well describes *U. siliquoideus*, Barnes, in an early stage of growth.

(*c.*) *U. cerinus.* This species cannot be confounded with *flavus*; it has much less prominent beaks, more compressed disks, is proportionally longer, with the hinge and basal margins more nearly parallel, while the color of the epidermis and of nacre are very different. Mr. Lea seems to have hastily made them one species, probably without having time or inclination to compare them.

(*e.*) *U. complanatus*, Soland. There has been some controversy respecting the original name of this species, but it seems clear that Solander had Say's *purpureus* in view when he described his species. He not only remarks that it inhabits rivers in Maryland and New Jersey, but his description, "ovate, compressed, with the front (posterior) margin straight, obliquely truncated towards the cardinal slope, hinge with the primary teeth three-sided and striated," applies very well to a common variety of Say's *purpureus*. If Solander's name had been founded alone on the figure in Lister, t. 150, fig. 5, it could not be retained, because the species intended to be represented by that figure will probably ever be disputed; and it represents *U. niger*, Raf., much better than the shell in question. Lamarck even quotes it for *crassidens*, (Lea's *trapezoides*,) which it certainly does not resemble. The words "admodum crassus," engraved on Lister's plate, prove that it was an exceedingly thick shell, and a Western species.

(*f.*) *U. clava.* Kuster has quoted Rafinesque's figures 23 and 24 for his *gibbosa*, which is a nodulosus species not figured on any of his plates. Those figures represent *U. scalenia*.

(*g.*) *U. nodiferus*, Con. Mr. Lea considers this identical with *prasinus*. Since I have compared several specimens with a fine series of the latter species, I see little resemblance between them. The *nodiferus* is a smaller, more ventricose and inequilateral shell, and the large tubercles grouped together about the middle of the disc, are never seen in *prasinus*. The latter has the slightly prominent tear-shaped tubercles like the young *quadrulus*, very dissimilar in number, shape and prominence to those of the *nodiferus*. Three specimens of the latter, from Alabama, are in the collection of the Academy.

(*h.*) *U. ochraceus*, Say. T. 157, fig. 12, in Lister's Conch., is usually referred to *Anodonta cataracta* of Say, but it much better agrees with the Southern variety of *U. ochraceus*. The color, "subruber," does not agree with any of our *Anodontas*, and, moreover, Lister names it PECTUNCULUS, under which general term he includes *Galathea*, *Paxyodon* and *Cyclas*, which is sufficient evidence that his *Pectunculus fluviatilis* had well defined teeth. The cardinal teeth of the Southern *ochraceus* being distinctly striated, would account for the name of *Pectunculus* being applied to it. Besides, it will be observed that Lister commences the *Anodontas* with the heading of "Section 2d, De musculis cardine lævi," which includes three species. His Section 3d then commences under the heading of "Pectunculus." This is proof positive that his t. 157, fig. 12, is not an Anodonta.

(*i.*) *U. obliquus*, Lam. Mr. Lea has referred Barnes' *undatus* to this species, but Lamarck's description is wholly inapplicable to *undatus*, which is not oblique, and certainly not "ovate-rotundate." The error probably originated in Barnes' citation of Lamarck's species with a mark of doubt, as synonymous with *undatus*.

(*j.*) *U. plexus*, Con. There is a variety of this species, more elliptical, and with the umbo and upper part of the disc covered with closely-arranged granulations. It is possible that this may prove to be a distinct species. *U. semigranosus*, some conchologists think the same species with *U. plexus*, but it certainly cannot be, if von dem Busch's species is represented in Phillippi's Conchyl. pl. 1, fig. 1. That is a far larger shell, and of a totally different character.

(*k.*) *U. prasinus*, Con. Mr. Lea observes that Prof. Kirtland thinks this may prove to be a variety of *pustulosus*, (*bullatus*, Raf.) They are, however, very distinct species, the *prasinus* being much longer comparatively, with fewer and less prominent tubercles, and arranged in a very different manner. The cardinal plate under the beaks is not dilated; in the *nodulatus*, it is profoundly dilated, a very important difference, which it is strange should have been overlooked. Young shells of *prasinus* and *bullatus*, when compared, are strikingly dissimilar.

(*l.*) *U. purpuratus*, Lam. There is no doubt that Solander named this species *ventricosa*, as Humphreys terms it "La Ventrue rouge," and gives the habitat of "Mississippi river," where it abounds, and where no other species has been found which agrees with the description.

(*m.*) *U. quadrulus* is not *U. rugosus*, Barnes. Mr. Lea remarks that some of our best Western conchologists think *U. rugosus* identical with *U. fragosus*. Barnes' figure certainly has little resemblance to the latter, and the "*broad* nodulous, somewhat *double* ridge," wholly inapplicable to *quadrulus*. Mr. Lea says, "two specimens referred to by Mr. B. as *rugosus*, were under my inspection, and proved to be, the one a flat *metanever*, and the other a *plicatus*." Now the *rugosus* may be the *metaneurus*, Raf., but Barnes' figure was never intended for any variety of the *U. plicatus*.

Mr. Say has unfortunately copied Barnes' description of *U. rugosus*, and applied it to *U. quadrulus*, Raf.

(*n.*) *U. undatus*. It has been supposed that this was the shell described by Mr. Lea as *trigonus*, but it is distinct. There is a fine specimen of *undatus* in the collection of the Academy, which agrees perfectly with Barnes' figure, and is much more ventricose anteriorly and over the umbo, than *trigonus*; has more elevated beaks, and is very inequilateral, whilst the latter is nearly equilateral. The *undatus* is equally distinct from *cordatus*, Raf., which is comparatively compressed.

Compare Barnes' description, "subtriangular, very tumid, waved," with Lamarck's description of *U. obliqua*, "ovato-rotundate, oblique," and the discrepancy must strike every one; yet both Lea and Deshayes make them one species.

U. undulatus, Barnes. The old specimens of this species have so much resemblance to Say's heros, as even to have deceived Say himself, who abandoned his species, and referred it to Barnes's *undulatus*; but it is a very distinct species, the young shell having little resemblance to that of the latter. There can be no doubt that Barnes figured the species now known as the *costatus* of Raf.

(*o.*) *U. viridis*, Raf. Mr. Lea gives another name to this shell, because he says it is not Rafinesque's species, which it certainly is; yet he does not acknowledge Rafinesque as authority, for he applies his specific names, as in the case of *U. interruptus*, to a species of his own; consequently the shell in question should have been quoted by him as *U. viridis*, Con., unless he has one rule applicable to himself and another referable to other authors. The shell labelled *viridis* by Rafinesque himself in Mr. Poulson's cabinet, is the same as Lea's *Tappianus*.

ANODONTA.

(*a.*) *A. cataracta*, Say. The *Mytilus fluviatilis* of Gmel. and Dillwyn, and the *M. illitus* of Solander, appear to be merely names given to the *Unio ochraceus* in Lister's work, t. 157, fig. 12. The two *Anodontas* figured by Lister, t. 154, 155, and having *Virg.* inscribed upon the plates, I cannot refer to any of our species.

(*b.*) *A. marginata*, Say. Dekay regarded this shell as the young of *implicata*, and it is not unlikely his opinion was correct. It certainly is not Say's *cataracta*.

Supplementary Notes.

U. cuneatus, Raf. Having examined several specimens of this shell, it is found to be a form between *U. patulus* and *U. clavus*, and may be a distinct species.

U. fasciolus, Raf. Mr. Poulson's specimen labelled by Rafinesque, is not *U. multiradiatus*, but certainly *U. subangulatus*, Lea.

U. simplex, Lea. It is strange that Mr. Lea should compare this shell with *U. Hydianus*, to which it bears no resemblance, and at the same time overlook *U. Greenii*, Con. His figure might almost answer for a copy of mine.

U. triangularis, Raf. Mr. Poulson's cabinet contains no authentic specimen of this species, which is one I have never identified. *Pachostea*, *Cliffordiana* and *lateralis* are also uncertain species. *Lampsilis rosea* and *pallida* are probably varieties of *U. ochraceus*.

Table showing the geographical range of the Families Unionidæ, Muteladæ *and* Mycetopodidæ, *and some of the genera and sub-genera.*

Asia.
Family Unionidæ.
Sub-genera.
Naia, *Swains.*
Lanceolaria,* *Con.*
Monodontina, *Con.*
Genera.
Barbala, *Humph.*
Hyriopsis,† *Con.*
Nodularia,‡ *Con.*

Europe.
Sub-genera.
Mysca, *Turton.*
Potamida, *Swains.*

Africa.
Family Muteladæ.
Mutela, *Scopoli.*
Iridella, *Con.*
Pleiodon, *Con.*, *Gray.*
Calliscapha, *Swains.*
Spatha, Lea.
Family Unionidæ.
Sub-genus.
Cælatura,§ *Con.*

Australia.
Family Unionidæ.
Hyridella, *Swains.*
Parreysia, *Con.*
U. multidentatus, Parreyss.
Cucumaria,‖ *Con.*

North America.
Family Unionidæ.
Sub-genera.
Eurinea, *Raf.*, *Agas.*
Lampsilis, *Raf. Agas.*
Canthyria, *Swains.*
Theliderma, *Swains.*
Cunicula, *Swains.*
Genera.
Metaptera, *Raf.*, *Agas.*
Strophitus, *Raf.*
Lastena, *Raf.*
Complanaria, *Swains.*, *Agas.*
Alasmodonta, *Say*, *Agas.*

South America.
Family Muteladæ.
Genera.
Leila, *Gray.*
Paxyodon, *Schum.*
Prisodon, *ib.*
Sub-genus.
Iridea, *Swains.*

Family Mycetopodidæ.
Mycetopus, *D'Orb.*

Family Unionidæ.
Genera.
Lamproscapha, *Swains.*
Monocondylæa, *D'Orb.*
Byssodonta, *ib.*
Sub-genus.
Corrugaria, *Con.*

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* U. Grayanus, *Lea.* † U Delphinus, *Gruner.* ‡ U. Douglasiæ, *Gray.* § U. Egyptiacus. ‖ U. cucumoides, *Lea.*

Sub-genera of Unio.

NODULARIA, *Con.*

Shell nodose; cardinal teeth robust, single in the right valve; in each valve the principal cardinal tooth is parallel with the lateral teeth, or directed towards the posterior extremity of the shell.

Unio Douglasiæ, Gray.

IRIDEA, *Swains.* South America.

Shell with corrugated radiating folds on the beak or umbo; cardinal teeth granulated, generally curved, elongated. Third muscular impression distinct, not confluent, situated under the anterior portion of the cardinal tooth.

Unio granosus, Lam. To this subgenus I would refer *U. solisiana,* D'Orb., *U. Paranensis,* Lea, *U. rhuacoica,* D'Orb., *U. Fontainiana,* D'Orb., *U. hylæa,* D'Orb., *U. Guaraniana,* D'Orb., *U. Matoniana,* D'Orb., *U. Psammoica,* D'Orb., *U. charruana,* D'Orb.

This sub-genus is very distinct from any of those existing in North America, nor, indeed, does there appear to be any sub-genus in South America identical with a Northern group.

MYSCA, *Turton.* Europe.

The type of this sub-genus, *U. pictorum,* has the third anterior muscular impression deep, and more distinct from the large one, than occurs in any American species of Unio.

LANCEOLARIA, *Con.* China.

Shell elongated; cardinal teeth widely bifid; third muscular impression situated at the base of the anterior lobe of the cardinal tooth, not confluent, and very profoundly impressed; accessory impression small and confluent with the superior margin of the large impression; pallial impression slightly deflected anteriorly.

U. Grayanus, Lea.

CŒLATURA, *Con.* Africa.

Shell thin, not elongated; beaks corrugated or subnodular; cardinal teeth laminar, greatly elongated, parallel with the anterior hinge margin; anterior accessory muscular impressions confluent with the lower part of the larger one; pallial impression slightly deflected.

U. Ægyptiacus, Caill.

CUNICULA, *Swains.* North America.

Shell compressed, thick, lateral teeth robust and receding from the dorsal margin, posterior accessory muscular impression not confluent, and placed at the extremity of the lateral teeth.

U. fasciolaris, lineolatus, Eastbrookianus, subtentus, cœlatus, arcus, &c.

I have founded this subgenus on other characters than those given by Swainson.

GLEBULA, *Con.* Lousiana.

Shell with the cardinal teeth granulated and profoundly sulcated or divided into 4 or 5 lobes, irregular, diverging, somewhat resembling those of *Paxyodon;* posterior muscular impression very large and confluent with the accessory, which is obsolete.

U. rotundatus, Lam.

UNIOMERUS, *Con.*

Shell elongated, not thick, with parallel dorsal and basal margins; beaks with obliquely concentric plicæ.

U. declivis, camptodon, subcroceus, Sayii, rivularis, perrectus, symmetricus, and excultus.

The members of this group inhabit almost exclusively the small streams and ponds in the Southern States.

THELIDERMA, *Swains.*

This embraces all the tuberculated species, as U. Phillipsea, fragosus, nobilis, quadrulus, apiculatus, &c. The animal appears to agree with that of the mytiloid species, as U. ruber, coccineus, obliquus, cordatus, &c.

LAMPSILIS, *Raf.*

This includes U. ochraceus, ovatus, cardium, capax, dolabræformis, &c.

EURINEA, *Raf.*

This includes U. nasutus, rectus, productus, Jayensis, lanceolatus, &c.

Proposed New Genera.

CUCUMARIA, *Con.* Australia.

Shell elongated, plicate; cardinal teeth robust, little prominent, obtuse, slightly lobed, transversely sulcated; lateral teeth compressed, not prominent; third anterior muscular impression profound, not confluent, situated immediately under, and near the extremity of the cardinal teeth.

U. cucumoides, Lea.

HYRIOPSIS, *Con.* Asia.

Shell elongated, posteriorly winged; cardinal teeth elongated, very oblique, not prominent, and marked with transverse granulated lines; lateral teeth granulated on the margins; third anterior muscular impression large, not confluent, situated remote from the extremity of the cardinal teeth; anterior accessory muscular impression rather small and more distant from the large impression than in any other sub-genus.

We know only one species, *U. delphinus,* Gruner.

MONODONTINA, *Con.*

Hinge with an obtuse rounded tooth immediately under the beak.

Margaritana Vondenbuschiana, Lea. (*M. Buschiana,* Con.)

CORRIGENDA.

U. angustatus, *Lea,* 1832, vi. &c.
U. capax, *Green,* (Symphynota globosa,) *Lea,* 1834, v. 41, &c.
U. capsæformis, *Lea,* 1834, v. 31, &c.
U. metanever, *read* U. metaneurus.

The Committee on Major Le Conte's paper on the Vines of North America, reported in favor of publication in the Proceedings.

An enumeration of the Vines of North America.

By JOHN LE CONTE, F. L. S.

In attempting to give some account of the vines of our country, a very considerable difficulty arises, even at the outset, from the great similarity of the different species. A family resemblance almost amounting to identity runs through the whole of them. Hence, characters which are taken as distinctive, may appear too slight to warrant us in separating as distinct species what at first sight might appear to be mere varieties. But setting aside the shape and appearance of the leaves, the nature of the fruit and the method of its growth, in most cases, furnish a good criterion for distinguishing closely allied species from each other, which might in vain be sought for elsewhere.

Some years ago, when there existed a *mania* for the cultivation of the vine, there was much written about our native grapes, which only tended to involve in obscurity a rather plain and easily developed subject. Men unacquainted with botany, gardeners and others, remarkable only for their ignorance, folly and bad faith, gave names to various kinds of grapes, and frequently made a dozen species out of one. These names, barbarous and unmeaning as they are, were never bestowed on the same variety by any two writers; they saw differences where none existed, and endeavored to account for them by supposing impossibilities. Thus, a variety of V. labrusca, which has been called the Isabella and Catawba grape, and received several other as ridiculous appellations, has been considered as a hybrid between a European and one of our native species. This variety has always been said to have been first found in South Carolina, a country where the V. vinifera had at that time seldom or never been cultivated, and where it by no means flourishes, and where likewise the labrusca is not found. Although among some families of plants hybrids occur naturally or may be formed artificially, yet it is difficult to understand how this ever can be the case in the genus Vitis. In forming a hybrid, it is necessary to emasculate the flower which we wish to produce fruit, and to impregnate its pistil with the pollen of some other species; this is impossible in the present instance, on account of the minuteness of the flower and the parts of fructification. If the hybrid be supposed to be formed naturally, how could the anther dust of a cultivated plant be carried in a sufficient quantity from a garden to produce any effect in the thick woods of the Southern States?

Botanists have hitherto been able to detect but few species of Vitis in the United States. Michaux, Elliot and others, reckon but four or five in the whole extent of our country. Rafinesque, by believing in the various follies of the day, and led aside by writings which fell into his hands and by the false statements which he collected from different quarters, made forty-one species of this genus, the most of which he had never seen. Although able to investigate and describe as well as any naturalist of his day, he was led astray by an insatiable desire of making new species, and appropriating to himself every thing that he saw or even heard of in Natural Science, he gave names to many things which never existed, and furnished accounts of them as if he had had them in his possession. Although his lucubrations are little worthy of notice, I have endeavored to identify as many of these numerous species as possible, and to reduce them to some degree of certainty; guided as well by what I remember to have seen in his possession, as by the short, and, in many instances, very imperfect descriptions found in his American Manual of Grape Vines; some I have not been able to determine, but scarcely think them different from others already well known. The number of species now recognized in systematic works is not more than five or six. I have increased this number considerably; with what propriety is for others to judge.

In my wanderings through our country, I have, I think, seen two more species, but have no memoranda of their characteristics which allow me to say more than that one was observed in the middle regions of Georgia, which bore grapes of a tolerably large size, in clusters of such density that the berries were pressed into a cubic form. The other was a small grape, of which the inhabitants of the upper part of North Carolina made a considerable quantity of pale red wine. This may be the V. cordifolia of Michaux, which species I have not been able to determine. The description of the last species, V. palmata, is taken in a great measure from recollection, and not from a late examination.

By the word racemus or raceme, I wish to be always understood to mean the bunches of mature fruit, the true and legitimate meaning of the Latin word.

1. VITIS LABRUSCA. Foliis lato-cordatis, sublobato-angulatis, aut quinquelobatis acuminatis, irregulariter eroso-dentatis, supra glabris, subtus irregulariter reticulatis, dense tomentosis aut velutinis, pube incana aut rufescente, baccis magnis rotundis aut ovalibus.

Hab.—In the Northern and Middle States. V. sylvestris, occidentalis, et vulpina, Bartram, in New York Medical Repository, Hexade II, vol. I. V. latifolia, canina, luteola, rugosa, ferruginea, labruscoides, blanda, prolifera and obovata, Rafinesque's American Manual of Grape Vines. Vulg. Fox grape, Isabella and Catawba grape.

Stem large and tall. Leaves widely cordate, sublobately-angled or distinctly three or five lobed; acuminate, irregularly eroso-dentate, above smooth, beneath irregularly reticulate, beneath densely tomentose or velvety; the pubescence of various length, hoary or rufescent. Berries large, ·7 of an inch in diameter, round or oval.

The commonest form of this species has thick leaves, with a rather long pubescence beneath; the racemes are small, rarely with more than five or six berries on each; these are round, often oblate, black or red colored, acid and austere, frequently occasioning soreness of the lips and fauces of those who eat them. Another variety much cultivated under the names of Isabella, Catawba, and twenty other unmeaning names, has the leaves thinner, the pubescence underneath much shorter and more velvety, the racemes large, long and dense, the berries more or less oval, red or black, very sweet and agreeable to the taste, with a peculiar flavor, by some called musky. This is much cultivated in some parts of the Union, and wine of a fine quality is made from it. But like all the grapes of America the fruit is so watery that it is thought necessary to add sugar to the must, not considering that the must before fermentation can be made of any strength with regard to the sugar contained in it, by boiling, as is done in some parts of the country with apple and pear juice.

The best of all the varieties of this species is the white fruited, which does not differ in its leaf from that first described; the racemes are, however, large, long and dense, the berries white or green with a slight coppery tinge on the side exposed to the sun. It is, perhaps, the best grape indigenous to America which has been found in the Northern States. It is very sweet, and has but little of the peculiar flavor which almost all the others have, and is entirely free from all acridity.

2. V. TENUIFOLIA. Foliis tenuibus, lato-cordatis simplicibus, trilobis aut quinquelobis acuminatis irregulariter dentatis, glabris interdum subtus arachnoideo-villosis, nervis rufo-pubescentibus. Racemis parvis, baccis magnis, rotundis, viridibus paulo glaucescentibus, ingratis acidis.

Hab.—In New Jersey, formerly very common in the vicinity of Trenton, but now not to be found.

Stem tolerably large and tall; leaves thin, widely cordate, simple or three or five lobed; acuminate, irregularly dentate, smooth, sometimes arachnoideo-villous beneath; the nerves and veins always furnished with a rufous pubescence. Racemes small, berries large, ·8 of an inch in diameter, green, a little glaucous, disagreeably acid.

3. V. ÆSTIVALIS. Foliis lato-cordatis sublobato-angulatis, tri vel quinquelobis, acuminatis irregulariter serratis aut dentatis, dentibus mucronatis, supra glabris aut paulo arachnoideis, subtus arachnoideo-villosis plus minus fuscis, interdum subglabris, junioribus densius villosis. Racemis parvis, baccis parvulis nigris acidis.

Hab.—In Carolina and Georgia. V. æstivalis, Michaux and Rafinesque. V. labrusca, Walter and Elliot. Vulg. Fox grape.

Stem large and lofty; leaves widely cordate, sublobately angled, sometimes distinctly and deeply three and five lobed; acuminate irregularly dentate or serrate, with the teeth mucronate, above smooth or a little arachnoidal, especially in the younger state, beneath more or less fuscous, arachnoideo-villous, sometimes subglabrous, the youngest one more densely villous. Racemes rather small; berries rather small, ·4 of an inch in diameter, black, generally very acid.

These three species have a general resemblance to each other, but, as appears from the descriptions, are sufficiently distinct.

4. V. BRACTEATA. Foliis cordatis, acuminatis, quinquelobis, sinubis latis profundis, irregulariter dentatis dentibus acutis muticis, supra glabris, subtus nervis rufo-pubescentibus. Florum fasciculis bracteatis. Racemis longis compositis laxis, baccis parvis nigris.

Hab.—In Carolina and Georgia in swamps. V. bracteata, Raf. V. æstivalis, Elliot. Vulg. Duck shot or Swamp grape.

Stem very large, climbing to the tops of the loftiest trees; leaves broad-cordate, acuminate, five-lobed, sinuses wide and deep, the lobes irregularly dentate; the teeth without any mucronate point, above smooth, beneath with the nerves rufo-pubescent. Fascicles of the flowers with a short leaf or bract at the base of each; racemes long, loose, and compound; berries very small, ·15 of an inch in diameter, very acid.

5. V. VULPINA. Foliis glabris, cordatis acuminatis, simplicibus, trilobis aut interdum profunde quinquelobis, dentatis, dentibus subabrupte-acuminatis, subtus plus minus sparse villosiusculis aut etiam glabris. Racemis densis baccis parvis.

Hab.—In the Northern and Middle States. V. vulpina, Willd. V. æstivalis, Emerson's Report on the Trees, &c., of Massachusetts. V. cordifolia of many authors, but not of Michaux. V. callosa, hyemalis, cordifolia, Raf. Vulg. Winter grape.

Stem moderately large, very branching, the younger shoots for the most part purplish. Leaves always smooth above, and generally so on both sides; beneath sometimes, particularly in the younger ones, a little villous; cordate acuminate dentate, the teeth abruptly acuminate, always more or less tri-lobate, sometimes profoundly so, and often five-lobed. Racemes tolerably large, very dense, so as even to change the form of the berries; berries ·35 of an inch in diameter, black, acid.

The name of cordifolia is occasionally given improperly to another species, the V. rotundifolia Mx. Willdenow's description is not very full, but sufficiently so to remove all doubt of his meaning this species; there is no other so well deserving the name of Vulpina, as the grapes have a strong smell much resembling that of a fox.

The older leaves are without any villosity beneath except on the nerves, which with the veins are very prominent. They frequently become glaucous beneath.

6. V. ARANEOSUS. Foliis lato-cordatis, sublobato-angulatis, integris, trilobis aut quinquelobis, lobis acuminatis, dentatis, dentibus submucronatis, supra glabris, subtus arachnoideo-villosis, villositate plus minus ferruginea. Racemis subdensis, baccis majoribus nigris.

Hab.—In the upper parts of Georgia. Vulg. Fox grape.

Stem moderately large and high. Leaves broad, cordate, sublobately angled, entire and three or five lobed, acuminate dentate; the teeth submucronate, above glabrous, beneath arachnoideo-villous, more or less ferruginous; in the older leaves this villosity forms into small tufts or knots, and in the very oldest almost entirely vanishes, although in the youngest it is very thick and close. Racemes dense; berries of a middling size, ·5 of an inch in diameter, black, often very sweet and agreeable. The leaves are sometimes 8 inches long and as many wide.

This species is well worth cultivating.

7. V. BICOLOR. Foliis lato-cordatis sublobato-angulatis acuminatis subintegris et tri aut quinquelobis irregulariter dentatis, dentibus acuminatis aut mucronatis supra glabris subtus pallidioribus, in junioribus sparse arachnoideo-villosis. Racemis laxis, baccis parvis nigris.

Hab.—From Pennsylvania to Virginia. V. æstivalis Darlington, Florula Cestrica.

Stem moderately large and high. Leaves broad-cordate, sublobately angled acuminate, subentire, and three or five-lobed, irregularly dentate; the teeth acuminate or mucronate, above smooth; beneath paler in the younger leaves, sparsely arachnoideo-villous, the villosity entirely vanishing with age. Racemes long, loose and compound; berries small, black, ·3 of an inch in diameter, sweet and agreeable.

8. V. PULLARIA. Foliis glabris, ovatis cordatis acuminatis, ut plurimum versus apicem obscure aut profunde trilobatis rarius quinque lobatis sæpe integris, inæqualiter gross dentatis, dentibus acuminatis. **Racemis longis ramosis laxis.**

Hab.—In Virginia and Maryland. Vulg. Chicken grape.

Stem moderately large and tall. Leaves thin, smooth on both sides, polished, ovate cordate abruptly acuminate, beyond the middle more or less tri-lobed, sometimes five-lobed, often entire, unequally dentate; teeth large, acuminate; petioles and nerves beneath conspicuouslypubescent. Racemes long, compound and loose; berries small, ·3 of an inch in diameter.

9. V. RIPARIA. Foliis glabris ovatis cordatis acuminatis ante medium plus minus trilobis, sæpe integris dentatis, dentibus latis depressis, brevi-mucronatis. Racemis laxis baccis parvis.

Hab.—In Georgia and Mississippi on the banks of rivers in overflowed places. V. riparia Mx. V. dimidiata Rafinesque.

Stem large and tall. Leaves thin, smooth on both sides, polished ovate, cordate, acuminate, more or less tri-lobed beyond the middle, often entire, subcrenato-dentate; teeth broad, flat, with a short point; the youngest leaves with a slight arachnoid pubescence beneath, petioles, nerves and margin pubescent. The leaves are sometimes five-lobed, the upper lobes with deep spathuliform sinuses, the margin but little dentate. Racemes loose; berries small, ·3 of an inch in diameter, black and acid.

This species, confounded by most authors with the next (if it has ever been seen by them,) is found only in the southernmost States on the margins of rivers, in places frequently subject to inundation, whence its name among the inhabitants of the banks of the Mississippi, *Vigne de battures;* it very much resembles the next, but is easily distinguished by its thinner leaves and the arachnoid pubescence on the under side of them in their younger state.

10. V. ODORATISSIMA. Foliis glabris ovatis cordatis acuminatis inæqualiter crenato-dentatis dentibus mucronatis, ut plurimum versus apicem obscure trilobis. Racemis laxis, baccis parvis.

Hab. In the Northern States, in dry situations, generally on the sides of rocky hills. V. odoratissima Donn. V. riparia Pursh, Torrey and Gray, &c. V. serotina Bartram, l. c. seems to be V. cordifolia of Emerson, &c. V. montana, concolor, columbina, populifolia, odoratissima and amara Rafinesque.

Stem large and high. Leaves smooth on both sides, broad-ovate, cordate, acuminate, unequally crenato-dentate, teeth mucronate; generally obscurely trilobate beyond the middle, nerves beneath very prominent, margin, nerves beneath and petioles pubescent; a small pubescent tuft on the axillæ of the nerves of the under side of the leaves. Racemes long and loose, berries small, ·2 of an inch in diameter, black, very acid and austere, ripening in November.

This species is much cultivated in gardens on account of its fragrant flowers, the perfume of which is exactly that of Reseda odorata. It very rarely produces fruit. I have found fertile individuals only on the rocky hills north of Hoböken, New Jersey. I have been informed that the Indians formerly used the juice of this grape for dyeing blue.

11. V. ROTUNDIFOLIA. Foliis glabris nitidis rotundo-cordatis, acuminatis nunquam lobatis grosse dentatis, dentibus acutis subæqualibus, racemis parvis baccis magnis nigris, rubescentibus vel albis.

Hab. From Virginia to Florida. V. rotundifolia Mx. V. vulpina Walter. V. acerifolia, vulpina, angulata, and veruccosa Rafinesque. Vulgo, Bullace grape, from its resemblance to the bullace or wild plum of Europe, corrupted into Bull grape. In Virginia and North Carolina, it is called Muscadine and Scuppernon grape.

Stem moderately large, unlike every other species perfectly smooth even in the oldest vines. Leaves thin, smooth on both sides, polished, shining, most so beneath, round cordate, never lobed, acuminate dentate; teeth large, subequal, acute, axillæ of the nerves beneath sometimes furnished with a small tuft of pubescence. Racemes small, simple; berries large, ·2 of an inch in diameter, round, black, reddish or white.

This vine most frequently produces fruit of a delicious flavor and very sweet. In North Carolina much wine is made from the grapes, but generally it is spoilt by mixing it with peach brandy or whiskey to increase its strength. Among the ignorant it is commonly thought that no fermented juice of fruit can be kept for any length of time, unless it is adulterated with alcoholic spirit.

In the pine forests of Georgia the V. rotundifolia is found prostrate, with stems scarcely three feet long.

12. V. PALMATA. Foliis ovato-cordatis utrinque glabris, profunde quinque lobatis palmatis, laciniis sublanceolatis, inæqualiter lateque crenatis vel incisis. Racemis subdensis subsimplicibus baccis magnis albis gena cupræa.

Hab. In North Carolina and on the banks of the Ohio. V. palmata Vahl. V. virginiana Poiret.

This grape, which is the true Bland's grape of former years, was once (30 years ago,) extensively cultivated in the gardens of this city, but has since been utterly lost. I cannot now find a single plant of it. It was perfectly hardy, bore profusely and ripened before the frosts.

The above description is made from memory assisted by Vahl's and Poiret's descriptions. I have seen it growing wild in the mountains of North Carolina and have been informed that it was once common on the banks of the Ohio river. There is certainly no grape found in America that can be compared with it; in every respect it is equal to any variety of the V. vinifera, being very sweet and perfectly free from pulp, and without that peculiar flavor which is more or less common to all other American species.

The V. cordifolia Mx. I have never met with, at least a species corresponding with his description has never fallen in my way either in the North or South. It is said to extend from Pennsylvania to Florida. There is another small and sweet grape called the Orwigsburg which I have omitted, although said to be native; I could never satisfy myself that it was so. It has much the appearance of foreign varieties.

Of the foregoing species, those most worthy of cultivation are of No. 1, the white variety, and the Isabella or Catawba, which would probably flourish in the coldest parts of Europe; No. 6 and No. 11 and No. 12, all of which are sweet and agreeable and furnish good wine.

The Committee on Dr. Le Conte's "Synopsis of the N. American Siphales," and "Synopsis of the Scaphidilia of the United States," reported in favor of publication in the Proceedings.

Synopsis of the SILPHALES *of America, North of Mexico.*

By JOHN L. LE CONTE, M. D.

In the following synopsis, I have included also the Coleoptera which form Erichson's family Anisotomini, as the characters of that group appear to be by no means sufficient to entitle it to rank as a distinct family. Schiödte has already* made similar remarks, detailing at the same time, strong reasons in support of his opinion.

The genus Silpha presents among its species peculiarities which would furnish abundant material for reflection to the philosophic naturalist; the species found in this country, differ among themselves, by such variations of structure that each becomes the type of a separate group. Several authors have already designated many of these groups by generic names, yet the differences between them appear in value so much less than those which distinguish the genera, which have an appearance of being truly natural, that I have not considered it prudent to adopt their views.

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* Specimen Faunæ Subterraneæ: translated in the Transactions of the Entomological Society of London, New Series, vol. 1, p. 134, et seq.

Among some of these groups, (e. g. S. lapponica, S. americana and S. ramosa,) appear several forms, which are undeniably distinct in their origin and distribution and yet do not present characters sufficiently definite for their perfect separation. Many genera among more highly organized animals presenting this same peculiar specific relation will occur to the mind of every naturalist, but this is, I believe, the first example distinctly noticed among Articulata; nor can I find in scientific memoirs any allusion to a doctrine, which flows very naturally from such observations, viz: There are in nature genera so constituted that their division can naturally be made only so as to exhibit assemblages of individuals, which are multiple and distinct in their origin, but which are so closely related that any attempt to define and isolate them must result in confusion. The interpretation of so called geographical varieties, is obviously a portion of this doctrine; but for the present, I must merely content myself with this brief notice of a view, which, whether it be eventually proved correct or erroneous, might ere this have exerted a beneficial influence upon certain portions of Natural History, where the zeal for creating irrecognisable species has been pushed to a prodigious extent.

Div. 1. *Silphales genuini.*

*Trochanteres postici fulcrantes ; coxæ posticæ approximatæ.**

NECROPHORUS *Fabr.*

A. Thorace convexo, tenuiter marginato, antice non impresso.

1. N. **mediatus**, niger, thorace obovato, antice dense punctulato, lateribus et basi punctato, elytris macula humerali, altera transversa ante medium, tertiaque lunata versus apicem rubris; antennarum clava ferruginea; pectore abdominisque basi ad latera auropilosis. Long. ·87—·95.

Fabricius, Syst. El. 1, 334: Latreille, Gen. Ins. 2, 5.

Southern States, Missouri Territory and Texas. This very distinct species differs from all the succeeding ones by the epipleuræ being narrower, less inflexed, and less distinctly margined above. The posterior tibiæ are very much dilated at their extremity. In the male, the anterior tarsi are only moderately dilated, and the yellow hair at the base of the abdomen is more abundant. In both sexes the rhinarium is triangular.

Among the specimens from Nebraska are varieties in which the anterior transverse spot is divided; in some the outer part of this divided spot is effaced; in such individuals the posterior lunate spot is much reduced in size.

B. Thorace antice transversim impresso, margine laterali anguste depresso.

2. N. **marginatus**, niger, thorace obovato, marginibus parce punctulatis, lateribus vix sinuatis, elytris lateribus, fascia communi ante medium, alteraque utrinque subapicali rubris; antennarum clava ferruginea; pectore aurapiloso. Long. ·57—·88.

Fabricius, Syst. El. 1, 334.

New York, Georgia, Texas, Nebraska and California. The rhinarium is red and triangular; the posterior fascia does not entirely reach the suture, and its outer portion is contiguous to the apical margin. The anterior band is sometimes interrupted towards the side, and sometimes one of its posterior dentations is prolonged so as to reach the inner part of the posterior band. The anus and margins of the abdominal segments are ciliate with black hairs. The anterior tarsi of the male are moderately dilated.

3. N. **Melsheimeri**, niger, thorace obovato, lateribus subsinuatis marginibus punctatis, epipleuris elytrorumque faciis utrinque duabus dentatis rubris; antennarum clava ferruginea, basi nigra, pectore anoque flavo-pilosis. Long. ·92.

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* This last is a character found in the whole group; it is merely added here for the convenience of those who may desire to consider Scydmænidæ as a division of this, and not a distinct family.

? Kirby, Fauna Bor. Am. 97.

One female from Nebraska and another from Utah. Very similar in appearance to the preceding, but the anterior band does not reach the suture, and the posterior band is less close to the apex; the rhinarium in both specimens is black and triangular.

Kirby describes his species as having a red trapezoidal rhinarium, but as I find great differences in this respect between individuals of other species, I am not inclined to consider this character as of any importance. Kirby's descriptions are moreover very faulty and difficult to use, as he has laid undue stress on variable or on universal characters, while the differences in form of the thorax and the extent of its depressed portion are hardly mentioned.

The description of N. obscurus Kirby (l. c. 97,) also applies to this species, except that the epipleuræ are not "narrower than usual;" that character would assimilate it with my division (A), but from the want of a description of the thorax, it is impossible to place it accurately.

4. N. guttula, niger, thorace obovato, punctulato, lateribus sinuato, dorso subtiliter canaliculato, elytris gutta humerali rufa; antennarum clava obscure ferruginea, basi nigra, pectore auripiloso, abdomine nigro-pubescente. Long. ·48—·70.

Motschulsky, Bull. Mosc. 1845, part 1, 53.

California, abundant at San Diego, rare at San Francisco; also found at Sitka, according to Motschulsky, whose localities are, however, by no means accurate. The transverse impression of the thorax is very deep; the elytral spot is entirely on the base of the epipleuræ, and is sometimes very indistinct. The anterior tarsi of the male are dilated, and the rhinarium is black and trapezoidal; in the female the rhinarium is much smaller and triangular; the anus of both sexes is ciliate with yellow hairs.

C. Thorace subcanaliculato, antice transversim impresso, margine laterali latius depresso.

a. Thorace glabro.

5. N. americanus, niger, fronte, thoracis disco, epipleuris elytrorumque fasciis utrinque duabus rubris, antennarum clava ferruginea, pectore flavo-piloso. Long. 1·00—1·35.

Nicrophorus americanus Oliv. Ins. 10, 6; pl. 1, 3, (1790); Enc. Meth. 8, 154.

Necrophorus grandis Fabr. Ent. Syst. 1, 247, (1792,); Syst. El. 1, 334; Herbst, Kafer, 5, 152, tab. 50, 1.

Middle and Southern States, abundant. Fabricius quotes Olivier, but for some unknown reason does not adopt his specific name.

The rhinarium in this species is red, and very variable in form; sometimes it is small and triangular, sometimes very large and trapezoidal. This difference at first appeared to be sexual, but with a larger series of specimens I found that both forms were to be found among the males; although the variation is very great, yet after a diligent comparison, nothing was found to indicate specific difference.

6. N. pustulatus, niger, thorace subovali, subtransverso, marginibus punctatis, elytris distinctus punctatis, gutta laterali ad medium, alterisque utrinque duabus versus apicem saturate rubris; antennarum clava ferruginea, basi picea, pectore flavo-piloso, abdomine griseo-pubescente. Long. ·62—·85.

Herschel, Illiger's Magazin, 6, 271, (note.)

N. bicolor Newman, Ent. Mag. 5, 385.

Middle, Southern and Western States, not common. The rhinarium is red, triangular and moderately large; the anterior tarsi of the male are strongly dilated. I have one specimen in which the lateral elytral spot is hardly distinct, and the two apical spots entirely wanting.

7. N. nigrita, niger, thorace ovali, lateribus subsinuatis, marginibus punctatis, elytris subtilius punctatis, punctis maioribus 3-seriatis impressis; antennarum clava ferruginea basi nigra, pectore nigro-piloso. Long. ·75.

Mannerheim, Bull. Mosc., 1843, p. 251.

California, at San Francisco and San Diego; only two males secured. The impressions of the thorax are very deep, the transverse undulated line is not interrupted at the middle; the rhinarium is red and trapezoidal; the anterior tarsi are strongly dilated.

8. N. pygmæus, niger, thorace ovali, lateribus vix sinuatis, parce punctulato, marginibus punctatis, elytris distinctius punctatis, fascia utrinque dentata in epipleuras extensa, maculaque postica dentata rubris, pectore anoque flavo-villosis antennarum clava nigra. Long ·4—·6.

Kirby, Fauna Bor. Am. 98, tab. 2, fig. 3.

New York and Lake Superior. I have only males of this species; of three from Lake Superior, the smallest has the rhinarium large, trapezoidal and black; in the other two no rhinarium is visible. The impressions of the thorax are very deep, the longitudinal line is more distinct than usual; the red band of the elytra, although reaching the lower margin of the epipleura, is not dilated there.

The specimen from New York differs from the other three in having the elytra more finely punctured, and the red bands much more bright colored; the rhinarium is large and trapezoidal, as in the first mentioned specimen.

I formerly considered the large specimens as N. hebes Kirby, (l. c. 96,) which by description seems closely allied, but is placed in a different division of the genus, with the "prothorax dilated anteriorly."

9. N. lunatus, niger, thorace subovali, latitudine vix breviore, marginibus punctatis, elytris subtilius punctatis punctisque maioribus 3-seriatim impressis, epipleuris, fascia utrinque angusta dentata, maculaque lunata postica rubris; antennarum clava ferruginea basi nigra, pectore flavo-piloso, abdomine nigro-ciliato, ano flavo-pubescente. Long. ·75—·79.

New York and Georgia. This species is named in Dejean's Catalogue, but I cannot find that any description has yet been published. The posterior tibiæ are curved. The rhinarium is red and trapezoidal in two specimens; in another it is scarcely to be seen.

10. N. orbicollis, niger thorace rotundato, marginibus punctatis, elytris distinctius punctatis, parcius pilosis, utrinque fascia dentata maculaque postica lunata rubris, antennarum clava ferruginea basi nigra, pectore flavo-villoso, abdomine nigro ciliato, ano griseo-pubescente. Long. ·73—·90.

Say, Journ. Acad. Nat. Sc. 5, 177.

N. Hallii Kirby, Fauna Bor. Am. 98.

Middle and Southern States, abundant. The rhinarium is short, triangular and reddish; the punctures of the elytra are furnished with tolerably long erect yellowish hairs; the tibiæ are nearly straight; the posterior ones of the male are gradually broadly dilated towards the tip.

One male from the Sault de Sainte Marie, Michigan, differs in having glabrous elytra, and much more dilated posterior tibiæ; the rhinarium in it is piceous, broad and trapezoidal. The hairs of the elytra may have been removed by accident, and the other characters seem scarcely sufficient for the definition of a new species.

b. Thorace villoso.

12. N. velutinus, niger, thorace, pectore, epipleurisque basi flavo-villosis, illo ovali subtransverso, lateribus sinuatis, elytris distinctius punctatis, fasciis utrinque duabus, dentatis rubris, epipleuris flavis. Long. ·53—·85.

Fabricius, Syst. El. 2, 234, (1801); Kirby, Fauna Bor. Am. 96.

N. tomentosus Weber, Observ. 47, (1801.)

Common throughout the Atlantic States and Missouri Territory. The anterior tarsi of the males are strongly dilated; the rhinarium is red, sometimes large and trapezoidal, sometimes small and triangular; the latter form occurs in both sexes; the former I have observed only in males. The club of the antennæ is black.

As the two names applied to this species appear to be equal in date, I have followed other authors in adopting that of Fabricius, as his work is of a more systematic nature, and much more easily accessible.

The following species are unknown to me:

N. obscurus Kirby, Fauna Bor. Am. 97.

N. hebes Kirby, Fauna Bor. Am. 96. Nova Scotia.

N. maritimus Man. Bull. Mosc. 1843, 251; Chevrolat, Guérin's Icon. Regne An. 60, pl. 17, fig. 8; Sitka.
N. auripilosus† Esch. (teste Motschulsky, ibid. 1815, part i. p. 52.)

N. defodiens Man. Bull. Mosc. 1846, 13; Sitka and Unalaschka.

In Illiger's Magazin (6, 271 note,) Herschel mentions N. carolinus Linn., but after a very careful search, I cannot find any such species in Linnæus' works, nor is it mentioned by any other author.

SILPHA *Linn.*

The following arrangement of the species is the most natural that I have been able to form; it must be remembered at the same time, that the intermediate coxæ in all our species are moderately distant:

A. Antennæ articulis tribus ultimis longioribus.
  a. Antennæ laxe articulatæ; oculi prominuli.

1. S. surinamensis Fabr. Ent. Syst. 1, 248; Syst. El. 1, 336; Linn. Syst. Nat. (ed. Gm.) 4, 1620: ibid. (ed. Turton,) 2, 99; Olivier, 11, tab. 2, fig. 11; Herbst, Käfer, 5, 173.
Necrodes surinamensis Latr. Gen. Crust. et Ins. 1, 498.
Common in the Middle, Southern and Western States. Varies in having a small lateral spot at the middle of the elytra, and sometimes a small discoidal one between the 2d and 3d costa. The posterior thighs of the male are very much incrassated, and armed beneath with a sharp tooth; the posterior tibiæ are also much curved, and dilated internally towards the apex into an obtuse angle.
I have excluded the synonym of Kirby, (Fauna Bor. Am. 99,) because the males of his Nova Scotia species are stated to have the posterior thighs very slightly enlarged. This needs confirmation by a re-examination of the original specimens now in the British Museum.

  b. Antennæ minus laxe articulatæ.
    α. Thorace subinæquali piloso; antennæ articulo 3io longiore.

2. S. lapponica Herbst, Käfer, 5, 209, pl. 52, fig. 4.
S. caudata Say, Journ. Acad. Nat. Sc. 3, 192.
S. tuberculata Germar, Ins. Nov. 81.
S. californica Mannerheim, Bull. Mosc. 1843, 253.
Oiceoptoma (*Thanatophilus*) *lapponicum* Kirby, Fauna Bor. Am. 100.
Oiceoptoma granigera Chevrolat, Col. Mex. fasc. 1ma.
Found in every part of the northern portion of the continent, not extending south of Albany (New York) in the Atlantic States, but in the central region extending into New Mexico, and even into Mexico; found also in Oregon and at San Diego in Southern California.
I have only referred to the original description of Herbst, leaving out all the rest of the European synonymy, as it should have no place in a local fauna.
The elytra of the males vary slightly in form, being sometimes truncate, and sometimes slightly sinuate; those of the female are more deeply sinuate at the extremity, and are more or less prolonged at the suture; the anterior tarsi are slightly dilated in the males.
The differences upon which are founded the various synonyms above quoted, are entirely individual: they are all found intermixed together wherever the species occurs.

    β. Thorace glabro; antennæ art. 2 et 3 subæqualibus.
      * Thorace æquali, elytris truncatis.

3. S. truncata Say, Journ Acad. Nat. Sc. 3, 193.
Forks of Nebraska River.

      ** Thorace inæquali, elytris integris.

4. S. marginalis Fabr. Ent. Syst. Mantissa, 215; Syst. El. 1, 338;

Herbst, Käfer, 5, 180; Oliv. Ins. 11, tab. 1, fig. 5; Linn. Syst. Nat. (ed. Gmel.) 4, 1621; ibid. (ed. Turton) 2, 100.

S. noveboracensis Forster, Cent. Ins. 17.

Oiceoptoma (*Thanatophilus*) *marginatum* Kirby, Fauna Bor. Am. 100.

Southern and Middle States; according to Kirby found at lat. 54°. Kirby observes that in this case, at least, it would be very inexpedient to restore the older name, and this view I trust every entomologist will adopt.

5. S. inæqualis Fabr. Ent. Syst. 1, 251: Syst. El. 1, 340; Olivier, 11, tab. 2, fig. 20; Herbst, Käfer, 5, 185, tab. 41, fig. 2; Linn. Syst. Nat. (ed. Gmel.) 4, 1620; ibid. (ed. Turton,) 2, 100.

Oiceoptoma (*Thanatophilus*) *inæquale* Kirby, Fauna Bor. Am. 102.

Common through all the Atlantic district.

B. Antennæ articulo ultimo solo longiore, tribus præcedentibus æqualibus; articulo 2do 3io longiore.

a. Antennæ breves, crassiusculæ.

6. S. peltata *Lec.*

Scarabæus peltatus Catesby, Carol. 3, tab. 10, fig. 7, (1731.)

Silpha Americana Linn. Syst. Nat. (ed. 12); 2, 570; (ed. Gmel.) 4, 1619. (ed. Turton) 2, 99; Fabr. Ent. Syst. 1, 249; Syst. El. 1, 337; Olivier, 11, tab. 1, fig. 9; Herbst, Käfer, 5, 176.

Blatta Americana Catesby, Linn. et auct. al.

Oiceoptoma (*Necrophila*) *Americanum* Kirby, Fauna Bor. Am. 102.

O. (*N.*) *terminatum* Kirby, ibid. 103.

O. (*N.*) *affine* Kirby, ibid. 103.

O. (*N.*) *Canadense* Kirby, ibid. 104.

Northern, Middle and Southern States; the differences between Kirby's species appear to be partly individual and partly sexual; specimens presenting the characters of all his species occur together.

There is, however, a particular form which appears to be confined to the Southern States, which perhaps is sufficiently distinct to rank as a species; from the proportions of Catesby's figure, it is probably his typical insect; in which case the name *Americana* may be retained for the ordinary form, by those who wish to consider them as distinct.

The variety in question is larger and much broader than those found at the North; the sides of the thorax are less rounded, and the surface more densely and coarsely punctured. The suture of the female is armed with a more distinct spine; the horizontal portion of the epipleuræ is broader and not so much deflexed.

In regard to the change of name proposed above, I will merely observe that Catesby appears to have been the first describer of this species, and that his specific name has fallen into disuse, on account of the error committed by Linnæus in quoting Catesby's work; as this error has remained uncorrected so long, we are at liberty to infer that subsequent authors have merely quoted Linnæus, without verifying his assertion.

Although by the change here proposed, a well known name is sacrificed to one completely unknown, it seems to me that there could be no good reason for refusing to replace the earlier name, which has been lost, not by forgetfulness nor by ignorance, but simply by a perpetuated misquotation.

b. Antennæ elongatæ, tenues, sensim paulo incrassatæ.

7. S. ramosa Say, Journ. Acad. Nat. Sc. 3, 193.

S. cervaria Mannerheim, Bull. Mosc. 1843, 252.

Wisconsin, Minnesota, Missouri Territory, New Mexico, Oregon and California. In this widely distributed species, I have been able to distinguish three forms, which though differing by more decided characters than are usually to be found in varieties, can scarcely be considered in the light of ordinary species.

α. The color is dull black; the thorax is very much narrowed in front, and more strongly rounded on the sides than in the others; the margin of the elytra is broader and less reflexed; in the male, the elytra are broadly rounded posteriorly; in the female they are prolonged and obliquely narrowed, so that the body appears somewhat ovate. Of this form I have one female, from Fort Snelling (Minnesota) and another from Wisconsin; one male from Nebraska and one from Oregon.

β. Of this form I have only a single female specimen from California; the body is elliptical, narrower than (α), the thorax not so short; the margin of the elytra broad and strongly reflexed, the apex obliquely narrowed as in the preceding, but not longer than the abdomen; the slight tubercle on each elytron behind the middle is more apparent. Color greenish black.

γ. Color greenish black. Form regularly elliptical, narrower than the males referred to (α); thorax not so short, less narrowed in front; elytra broadly rounded behind in both sexes, margin narrower than in the others, and strongly reflexed. Very abundant in California.

Besides these, I have two specimens which cannot be classed with any of the above, and perhaps indicate other forms, which, however, cannot at present be distinctly separated.

The first is from Nebraska. It is a dull black male, having the thorax less narrowed in front than (α), and the margins of the elytra narrower, as in (γ), but less reflexed. The proportions of the body are as in the male of (α).

The second was found at San Diego, with (γ); it is a greenish black female of more dilated form, having the proportions of the male of (α), and having the elytra broadly rounded, as in (γ), the margin, however, appears less strongly reflexed than in that form; the tubercle of the elytra behind the middle, is more obvious than in (α) or (γ).

These forms appear to be subject also to considerable variation in the sculpture of the elytra; the punctures between the branching elevated lines are sometimes very distinct, and sometimes almost obsolete.

The following is unknown to me:

Oiceoptoma (*Thanatophilus*) trituberculatum Kirby, Fauna Bor. Am. 101.

Found in lat. 54°. With this is probably identical the '*Silpha opaca Auct.*' of White, in Richardson's Arctic Expedition (p. 474). Whether Kirby's insect is in reality distinct from the European S. opaca Linn., or is related to it as the forms of S. ramosa are to each other, must be left for future investigation.

NECROPHILUS *Latr.*

1. N. hydrophiloides Man. Bull. Mosc. 1843, 253; Chevrolat, Guérin's Icon. Regne An. 61, pl. 17, fig. 12.

San Francisco, in decomposing human excrements. Nothing in Mannerheim's description, or Chevrolat's figure and description, indicates any difference between Sitka specimens and those found by me, although a direct comparison ought to be made in order to establish their identity.

Motschulsky, (Bull. Mosc. 1845, p. 363,) states that what is considered as a black variety of this species, is distinct, and thereupon names it N. ater; with his accustomed haste, he leaves the distinctive characters to be determined by any individual who is so lucky as to possess such rarities; as few have had access to species from Russian America, an expression of opinion upon this matter might be dangerous; for those, however, who would prefer adopting the belief that there is but one species, until a second is demonstrated, I may mention that the species found by me varies from piceous to black, and that there is no other difference between differently colored individuals.

CATOPS *Fabr.*

A. Thorax angulis posticis obtusis.

1. C. opacus, ater, punctulatus, subtiliter pubescens, thorace semi-elliptico, basi late rotundato, elytris obsolete striatis, tibiis calcaribus magnis armatis, Long. ·23.

Say, Journ. Acad. Nat. Sc. 5, 184.

New York and Ohio, rare. The male has three joints of the anterior tarsi strongly dilated; the middle tarsi are not dilated. The sutural stria of the elytra is deeper than the others.

2. C. simplex, piceus, fulvo-sericeus, dense punctulatus, thorace antrorsum subangustato, lateribus rotundatis, basi late rotundato, elytris obsoletissime striatis, stria suturali profundiore, antennis basi testaceis; tibiis calcaribus mediocribus armatis. Long. ·14.

? Say, Journ. Acad. Nat. Sc. 5, 184.

New York. I am not positively certain that this is Say's species, which was found in Arkansas. The thorax is more narrowed in front than described by him; although the legs are in reality black, the lustre of the fulvous hair is such, that one might readily be tempted to describe them as testaceous at base.

The anterior tarsi and first joint of the middle tarsi of the male are moderately dilated; the antennæ are as long as the head and thorax, moderately thickened, the 7th joint is a little larger than the 6th and equal to the 9th; the 8th is about one half smaller.

3. C. clavicornis, oblongo-ovatus, ater, subtiliter pubescens, dense punctulatus, thorace antrorsum valde angustato, lateribus rotundatis, basi late rotundato, elytris versus apicem obsolete striatis, stria suturali profundæ, antennis thorace brevioribus magis clavatis. Long. ·11.

One female, New York. This species is readily distinguished from the preceding by the shorter, more clavate antennæ, which are only indistinctly testaceous at base; the 7th joint is about twice as large as the 6th; the 8th is smaller than the 6th, and appears only about one third as large as its neighbors. The spurs of the tibiæ are somewhat smaller than in the preceding species.

B. Thorax angulis posticis rectis vel acutis.

4. C. californicus, oblongus, subovalis, piceus, sericeus, subtilissime punctulatus et transversim strigosus, antennarum basi, pedibus, elytrisque pallidoribus, his stria suturali profunda, thorace antrorsum valde angustato, angulis posticis paulo productis. Long. ·12.

Abundant at San Jose and San Diego, California. The antennæ are slightly clavate, and as long as the head and thorax. The thorax is strongly narrowed in front, truncate at base, and slightly sinuate near the posterior angles, which are subacute; the sides are broadly rounded; the disc is sometimes blackish, and the sides dark rufous. The punctures of the upper surface in this species are very indistinct, and the transverse striæ very fine; the pubescence is sericeous, but not dense. The anterior tarsi of the male are strongly dilated, the intermediate pair simple, the posterior pair longer than the tibiæ.

One female from San Diego appears more elongated than the others, and much more narrowed posteriorly; I cannot, however, find any other difference.

5. C. strigosus, oblongo-ovalis, subelongatus, piceo-rufus, sericeus, distinctius strigosus, thorace latitudine sesqui breviore, antrorsum modice angustato, angulis posticis vix productis, elytris stria suturali profunda, antennis magis incrassatis piceis basi testaceis. Long. ·11.

One female, South Carolina, Dr. Zimmerman. This species resembles the preceding, but the thorax is less narrowed in front, and less rounded on the sides; the transverse lines on the thorax and elytra are more distinct; the punctures are very indistinct; the first four or five joints 'of the antennæ are testaceous, the rest are piceous, the apex is indistinctly paler.

6. C. consobrinus, oblongo-ovalis, subelongatus, ater, subsericeus, vix punctulatus, subtiliter transversim strigosus, antennis basi rufo-piceis, elytris stria suturali profunda, thorace antrorsum modice angustato, angulis posticis leviter productis. Long. ·12.

Georgia. This species resembles the two preceding, but is a little more elongated, and more oval; it is entirely black, excepting the base of the antennæ and the tarsi, which are rufo-piceous. The thorax is more than one half wider than long, moderately narrowed in front, broadly truncate at apex, very slightly rounded on the sides, truncate at base and faintly sinuate at the posterior angles, which are slightly acute. The punctures are very indistinct, the transverse scratches are as fine as in C. californicus.

7. C. terminans, oblongo-ovalis, minus convexus, nigro-piceus, subtiliter pubescens, elytris distinctius rugose punctulatis, stria suturali profunda, thorace breviore, antrorsum valde angustato, angulis posticis vix productis; pedibus fuscis, antennis apice flavis, basi testaceis. Long. ·12.

Le Conte, Agassiz' Lake Superior, 218.

Very abundant at the mouth of the Pic River, on the north side of Lake Superior, under dried animal matter. This species is broader and less convex than the preceding, and is easily known by the more distinct punctuation, and by the absence of the transverse lines. The thorax is densely and finely punctulate, it is about twice as wide as its length, strongly narrowed in front, rounded on the sides, especially anteriorly, slightly emarginate at apex, truncate at base, and very slightly sinuate at the posterior angles, which are scarcely perceptibly acute. The anterior tarsi of the male, and the first joint of the middle tarsi, are dilated.

By a misprint, the length in the description cited from Agassiz' Lake Superior, is made ·15 instead of ·12.

8. C. oblitus, subellipticus minus convexus, rufo-fuscus, pubescens, thorace punctulato antrorsum subangustato, basi truncato, angulis posticis fere obtusis, elytris transversim minus dense strigosis, stria suturali distincta, antennis flavis art. 4—10 fuscis. Long. ·07—·08.

Three specimens, Georgia. Easily distinguished by its sub-elliptical and less convex form. I cannot discover any punctures on the elytra; if they exist, they are concealed by the dense pubescence, which is, however, scarcely sericeous. The male has three joints of the anterior tarsi dilated; the middle tarsi are simple in both sexes.

9. C. parasitus, breviter ovatus, piceo-rufus, sericeus, thorace disco obscuriore, brevi, antrorsum valde angustato, angulis posticis non productis, elytris transversim strigosis, stria suturali profunda, antennis basi apiceque flavis. Long. ·08.

New York, in ants' nests, with Hetærius brunnipennis, March and April. This species is much broader and more suddenly narrowed posteriorly than the others. The thorax is fully twice as wide as its length, punctulate, not strigose, strongly narrowed in front, broadly rounded on the sides, truncate at base, with the posterior angles simply rectangular and not produced. The elytra are punctulate and distinctly striate transversely. The antennæ are as long as the head and thorax, very slightly incrassated, rufo-piceous, with the first 4 joints and the apical one yellowish; the 7th joint is more than twice the size of the 6th; the 8th joint is much shorter, but scarcely thinner than the following ones. The anterior tarsi of the male are broadly dilated; the first joint of the middle tarsi is less dilated than in C. terminans.

The following species are unknown to me:

C. basillaris Say, Journ. Acad. Nat. Sc. 3, 194, Missouri.

C. cadaverinus Man. Bull. Mosc. 1843, 254. Sitka.

Choleva (*Catops*) Spenciana Kirby, Fauna Bor. Am. 108.

COLON *Herbst.*

Mylœchus Latr.

1. C. dentatus, fuscus, oblongus, fulvo-sericeus, valde punctulatus, thorace latitudine vix breviore, antrorsum magis angustato, angulis posticis vix rotundatis, elytris stria suturali postice profundiore, antennarum clava magna picea, pedibus rufo-piceis, femoribus posticis dente acuto armatis. Long. ·09.

This, the first species of the genus found on this continent, was discovered by the Rev. D. Ziegler, at York, Pennsylvania. The characters above given will at once distinguish it from any European species. The thorax is scarcely wider than long, strongly narrowed in front, broadly rounded on the sides, truncate at base, and not sinuate at the posterior angles, which are rectangular and very slightly rounded; the punctures are dense, very distinct. The elytra are distinctly punctured; the sutural stria may be traced to the base, but is deeper behind the middle; there are traces of other striæ near the apex. The posterior thighs are compressed, and at the middle of the inferior margin are armed with a small sharp tooth.

Div. 2. *Anisotomini.*

Trochanteres postici simplices; coxæ posticæ approximatæ.

This division is considered by Erichson as a distinct family, which he divides into two groups: Anisotomini, with strongly spinous tibiæ, and Agathidiini, with the tibiæ slightly spinous, or merely pubescent. This arrangement does not appear altogether natural, as some of the species of Liodes have the spines of the tibiæ very distinct, while others have the same organs nearly smooth. Possibly a more natural division might be into three groups, thus:

A. Clypeus parvus capite connatus, vel vix distinctus; caput subtus non insculptum.

B. Clypeus valde distinctus: caput subtus non insculptum.

C. Clypeus nullus: caput subtus sulcis profundis insculptum.

The first group corresponds to Erichson's Anisotomini: the second contains Liodes, and probably Amphicyllis: the third contains Agathidium only. The first division is said by Erichson (Ins. Deutschl. 44) to be almost peculiar to Europe: it will be seen, however, that it is quite respectably represented in this country.

ANISOTOMA *Illiger.*

1. A. alternata, oblonga, ferruginea, nitida, thorace subtiliter punctato, elytris striis punctatis, interstitiis subtilissime punctulatis, alternatim pluripunctatis. Long. ·18.

Leiodes alternata Mels., Proc. Acad. Nat. Sc., 2, 103.

One male from Alabama, Haldeman: Dr. Melsheimer's specimen was found in Pennsylvania. The anterior tibiæ are gradually and slightly dilated: the posterior tibiæ are elongated, curved inwards, and slightly thickened at the tip.

2. A. assimilis, ovalis nigro-picea, thorace subtiliter punctato, lateribus rotundatis, basi late rotundata utrinque punctis maioribus marginata, elytris subtiliter punctato-striatis, interstitiis obsolete punctulatis, alternatim pluripunctatis. Long. ·16.

Le Conte, Agassiz' Lake Superior, 221.

One male, Eagle Harbor, Lake Superior. The anterior tibiæ are slightly dilated, the posterior ones elongated and curved inwards.

3. A. indistincta, rotundata, convexa, piceo-rufa, thorace obsolete punctulato lateribus minus rotundatis, basi vix sinuata, utrinque punctis paucis marginata, elytris minus subtiliter punctato-striatis, interstitiis subtiliter parce punctulatis, alternatim 3 vel 4 punctatis. Long. ·11.

Le Conte, Agassiz' Lake Superior, 221.

?*Leiodes puncto-striatus* Kirby, Fauna Bor. Am. 110.

One specimen, found on the north shore of Lake Superior. The anterior tibiæ are as in the preceding, the posterior ones are straight and not longer than the others. Kirby says that the interstices of the elytra are smooth, and they really appear so, except under a powerful lens: a new examination of Kirby's type must, however, be made before they can be considered as identical.

4. A. collaris, ovalis, convexa, rufo-testacea, antennarum clava, capite thoraceque piceis, hoc sat dense punctato, lateribus valde rotundatis, rufescentibus, basi truncata, utrinque punctis magnis marginata, elytris profundius punctato-striatis, interstitiis subtilissime parce punctulatis, alternatim 5 vel 6 punctatis. Long. ·12.

Le Conte, Agassiz' Lake Superior, 221.

One male, Eagle Harbor, with the posterior tibiæ slightly curved.

5. A. **strigata**, rotundata, convexa, ferruginea, thorace lateribus rotundato, basi truncato, vix obsoletissime punctulato, elytris seriatim punctatis, interstitiis parce transversim strigosis, et subtilissime punctulatis. Long. ·08.

Le Conte, Agassiz' Lake Superior, 221.

One specimen from Eagle Harbor. This species is remarkable for the sculpture of the elytra; the punctures of the interstitial spaces are almost invisible, and are usually placed in the transverse scratches; the sutural stria is deeply impressed posteriorly. By its sculpture this species is nearly related to A. hybrida Er., (Ins. Deutschl. 75) but that is an elongated species with a distinctly punctured thorax.

6. A. **obsoleta**, rotundata, convexa, rufa, thorace lateribus rotundatis, basi truncata vix sinuata, subtilissime parce punctulato, elytris subtiliter punctato-striatis, interstitiis obsoletissime punctulatis, 3^io^ parce punctato. Long. ·075.

Pallodes obsoletus Mels., Proc. Acad. Nat. Sc., 2, 107.

Pennsylvania: for a typical specimen I am indebted to Dr. Melsheimer. His description differs somewhat from the one here given, as the power of the lens used by him was not sufficient to enable the specific characters to be clearly perceived.

CYRTUSA *Er.*

1. C. **egena**, subglobosa, testacea nitida, parce subtilissime punctulata, elytris subtiliter striato-punctatis, tibiis posticis valde dilatatis. Long. ·05.

Two specimens from Habersham county, Georgia. This species agrees in every particular with the description of C. latipes Er., (Deutschl. Ins. 80) except that the thorax is more distinctly punctured at the sides; the sutural stria is impressed from the middle of the elytra to the tip. The posterior femora of the male are armed beneath, at the extremity, with a very large, slightly recurved tooth, as in C. latipes.

The insect described by me in Agassiz' Lake Superior, as Cyrtusa globosa, on more close examination proves to belong to Liodes.

COLENIS *Er.*

1. C. **impunctata**, subglobosa, testacea, nitida, thorace lævissimo, elytris impunctatis, transversim obsoletissime strigosis, stria suturali pone medium distincta. Long. ·03—·05.

Two specimens, found in Pennsylvania, were given me by Mr. Ziegler, a much smaller one was found by me in upper Georgia; as the posterior thighs are alike in all, they are probably females. This species will be easily distinguished from the European C. dentipes Er., (Deutschl. Ins. 83) by the thorax being smooth and shining, even when viewed with a Stanhope lens, and by the entire absence of punctures on the elytra.

The genus will be easily distinguished by the seventh joint of the antennæ being but little larger than the 8th, so that the club appears 3-jointed, the third joint is as long as the second; the middle and posterior tarsi are four-jointed.

2. C? **lævis**, globosa, nigra, nitida lævis, thorace margine omni diaphano, elytris stria suturali nulla, ore antennarum basi corporeque subtus rufis, metasterno medio nigro. Long. ·04.

Georgia. I considered this little insect as a non-globatile Agathidium, but on relaxing a specimen and examining the antennæ it appears to belong to this genus; the club of the antennæ is, however, more slender than in the preceding, so that the seventh joint really appears to enter into the club. The third to the sixth joints are equal in length. The anterior margin of the front is broadly rounded, as in the preceding genus. The mesosternum is strongly carinate. I cannot be absolutely certain that the posterior tarsi are not 3-jointed, in which case it would be necessary to place it in Agaricophagus; the tibiæ are apparently without spines.

The head is fully one-half as wide as the base of the thorax, and black, with the mouth yellowish. The thorax is very short, deeply emarginate in front, slightly rounded on the sides, broadly rounded at the base; the sides and basal margin are diaphanous and yellowish. The elytra are entirely without striæ or punctures, their tip is rufescent. The under side of the body and the feet are rufous; the metasternum has a large central black spot.

It is very probable that the relation between the second joint of the antennæ and the following ones should be considered as a generic character, and the absence of all sculpture on the upper surface would seem to indicate a genus distinct both from Colenis and Agaricophagus. Until more specimens occur, so that a dissection can be made, it would be better to allow the species to rest in the present genus.

Liodes *Latr.* (emend. Schmidt.)

1. L. globosa, hemispherica, nigro-picea, nitida, thorace subtilissime punctulato, lateribus rotundatis, diaphanis, elytris punctulatis, punctis vix maioribus seriatim positis, stria suturali postice profunda, antennarum basi tibiis tarsisque piceis. Long. ·13.

Cyrtusa globosa Le Conte, Agassiz' Lake Superior, 222.

Sault St. Marie, Michigan, under bark.

2. L. polita, hemispherica, nigra nitida, thorace impunctato, lateribus rotundato, elytris subtiliter punctato-striatis, interstitiis alternatim obsolete parce-punctatis, abdomine, ore antennarum basi pedibusque piceo-rufis. Long. ·11.

One specimen, South Carolina, Dr. Zimmerman. Still more globose than the preceding. The anterior tarsi are not dilated; the sutural stria as in all is deeply impressed posteriorly.

3. L. discolor, hemispherica, nigra, nitida, thorace impunctato, lateribus rotundatis, diaphanis, elytris profundius punctato-striatis, interstitiis alternatim parce punctatis, antennarum basi pedibusque piceo-rufis. Long. ·11.

Melsheimer, Proc. Acad. Nat. Sc. 2, 103.

One specimen, Pennsylvania, Dr. Melsheimer. This species resembled very much the preceding, but the rows of punctures on the elytra are larger; the interstitial punctures are very distinct, and the abdomen is brown only at the sides. The head appears reddish in some lights; the first joint of the anterior tarsi is slightly dilated. This species seems subject to variation in color, Dr. Melsheimer's specimen is described as being 'rufo-testaceous beneath.'

4. L. basalis, rotundata, convexa, nigra, nitida, thorace versus latera vix punctulato, elytris basi rufis, parce punctulatis, punctis maioribus confusis striatis, interstitiis alternatim 6- vel 7-punctatis, abdomine antennarumque basi rufo-piceis. Long. ·10.

Pennsylvania, Dr. Melsheimer; New Jersey, Mr. Guex. The red color of the base of the elytra extends from the epipleuræ almost to the suture, its outline is quite distinctly defined.

5. L. dichroa, rotundato-ovalis, convexa nigra, nitida, ore antennarum basi pedibus anticis, ventre elytrisque testaceis, his punctis confusis striatis, interstitiis vix subtilissime punctulatis, alternatim 6- vel 7-punctatis, sutura margineque nigricante; thorace lævigato. Long. ·09—·10.

One pair, Ann Arbor, Michigan; the anterior tarsi of the female are 5-jointed.

Agathidium *Illiger.*

A. Corpus globatile; humeri rotundati.

1. A. oniscoides, piceum, valde convexum, nitidum læve, elytris stria suturali nulla, antennis pedibusque rufo-testaceis. Long. ·13.

Beauvois, Ins. d'Afrique et d'Am. 160, pl. 6, fig. 2.

A. piceum Melsheimer, Proc. Acad. Nat. Sc., 2, 103, (1844.)

Pennsylvania, Dr. Melsheimer. The margins of the thorax are frequently rufescent. There is an A. piceum described by Erichson in 1845, the name of which may be changed by any one who does not wish to adopt the synonymy of this species as given above.

2. A. exiguum, nigro-piceum, valde convexum, nitidum, thorace lævi, limbo diaphano, elytris obsolete parce punctulatis, stria suturali antice obsoleta, postice profunda; antennis pedibusque rufis. Long. ·95—·08.

Melsheimer, Proc. Acad. Nat. Sc., 2, 103.

A. ruficorne Le Conte, Agassiz' Lake Superior, 222.

Found from Lake Superior to Louisiana. The tip of the elytra sometimes becomes rufescent; the abdomen is usually ferruginous, but is sometimes dark colored; I can find no difference between large and small individuals sufficient to warrant their separation; by actual measurement, however, Dr. Melsheimer's type is two-thirds of a line long instead of one-third as stated by him.

3. A. revolvens, piceum, nitidum, modice convexum, elytris subtiliter punctatis, obsolete striatis, stria suturali postice profunda. Long. ·14.

Le Conte, Agassiz' Lake Superior, 222.

One specimen from the north shore of Lake Superior. This species has the power of contracting itself into a ball as perfectly as the preceding, and the lateral outline of the elytra is precisely similar; it is very distinct by its less convex form, and distinctly punctured elytra.

B. Corpus subglobatile ; humeri obtusi.

4. A. pulchrum, nigrum nitidum, valde convexum, capite macula frontali rufa, thorace lævi margine omni flavo, elytris subtilissime punctulatis, maculis utrinque duabus magnis obliquis flavis, antennarum basi pedibusque rufis. Long. ›09.

San Jose, California, under oak bark. The elytra are finely punctulate; the sutural stria is deep and does not extend before the middle; the anterior spot commences at the humerus, and becoming narrower, runs obliquely backwards, nearly reaching the suture about the middle; the second spot commences below the humerus, and forms a broad vitta parallel with the margin, and not reaching the suture ; the thorax is sometimes black margined with yellow, sometimes yellow with a round discoidal black spot; the club of the antennæ is piceous, becoming rufous at its extremity.

The left mandible of the male is armed with a long curved horn.

5. A. difforme, piceum, nitidum, convexum, thorace vix subtilissime punctulato, lateribus rufescente, elytris distincte punctatis, stria suturali antice abbreviata. Long. ·08.

Phalacrus difformis Le Conte, Agassiz' Lake Superior, 222.

Two males from the north side of Lake Superior. The left mandible is armed with a long curved horn. The head is distinctly punctured ; the base of the antennæ, and the anterior feet are rufo-piceous; the margins of the elytra are rufescent.

I have nothing to say in extenuation of my error in placing this species in the genus Phalacrus, the form of the anterior coxæ, and the filiform tarsi, if looked at, would have taught me better.

The genus Sternuchus Lec., (Agass. Lake Sup. 222) must be suppressed, as, on careful examination, I find the club of the antennæ to be two-jointed; the part described by me as the antennæ of Sternuchus, appears to be an accidentally adhering fragment of another insect. There, therefore, remains no character to separate Sternuchus from Clambus, and the typical species must be called Clambus gibbulus; it is the analogue of the European C. armadillo; a slightly pubescent species found in Pennsylvania was given me by Mr. Ziegler. The genus Clambus, from the appearance of the under surface, may probably enter the family Trichopterygia, but as yet its place seems uncertain.

As an appendix to the present family, it may be proper to describe an insect which is placed in many American cabinets under the name ' Sphærites americanus.' It is, however, by no means a Sphærites, nor does it belong to the present family, but from its transverse anterior coxæ, entire prosternum, &c., &c., must be placed in the family Nitidulariæ, where it forms a new genus.

PSILOPYGA *Lec.*

Sulci antennales recti divergentes; labrum bilobum; mandibulæ dilatatæ, apice inflexa, acuminata, utrinque serrulata; palpi breves articulis ultimis ovalibus; mentum parvum breve subpentagonum ; tibiæ compressæ modice dilatatæ; tarsi anteriores dilatati, postici simplices; pygidium nudum.

The form of the body is very similar to that of Hister; it is glabrous, elliptical, and moderately convex; the elytra are truncate, so as to expose the last dorsal segment; the male has an additional small anal segment. The anterior tibiæ are more dilated than the others; their outer margin is finely serrulate, and the outer angle somewhat produced; the terminal spurs are unequal, the larger ones slightly bent; the prosternum is dilated and rounded posteriorly; the middle coxæ are distant. The first ventral segment is larger than the others.

By this detail of the characters, this genus will appear obviously different from any described by Erichson in his systematic arrangement of Nitidulariæ, (Germar's Zeitschr. 4, 267 et seq.); it seems to approach most closely Ischæna, (p. 287,) and Ipidia (p. 289.)

P. **histrina**, elliptica, modice convexa, nigro-picea, nitida, capite thoraceque parce punctulatis, punctis maioribus intermixtis, elytris striis 9 punctatis impressis, interstitiis parce subtilissime punctulatis, pygidio punctato. Long. ·21.

Pennsylvania, in fungi, Dr. Melsheimer and Mr. Ziegler. The thorax is narrowed in front, emarginate at the apex, with the anterior angles not rounded; the sides are broadly rounded, finely and strongly margined; the base is broadly rounded, with a broad, short and truncate lobe in front of the scutel; the latter is large, triangular and sparsely punctured. The striæ of the elytra are entire, and the 9th is slightly sinuous; the apex is truncate and has a few confused punctures at the termination of the striæ; the punctures of the pygidium are moderately large and shallow. The under surface is punctured; the epipleuræ are concave and punctured. The base of the antennæ is feebly rufo-piceous.

[*Note.* The manuscript of the "Synopsis of Scaphidilia" by Dr. Le Conte, having been mislaid, its publication must be deferred.]

The Committee on the following paper by Dr. Le Conte, reported in favor of publication in the Proceedings.

Synopsis of the species of the Histeroid genus ABRÆUS (Leach,) *inhabiting the United States, with descriptions of two nearly allied new genera.*

BY JOHN L. LE CONTE, M. D.

The number of species of Abræus found within our territory, renders the genus quite worthy of a special notice; as they are all very small and uniform in appearance, they present at first a moderate degree of difficulty in determining their characters. This difficulty, however, vanishes under a closer inspection, which shows the species to be as well defined as in other genera of the same family. For the more complete illustration of the genus, I have added descriptions of two species from Cuba; these being foreign to our present limits, are not numbered in the following list.

Two species, which I considered as belonging to this genus, on close examination present characters altogether different. I have accordingly constructed a new genus for them, which must be placed in a different division of the family, near Dendrophilus. To avoid confusion, however, as the species will undoubtedly be mistaken by others for Abræus, I have thought it better to append the generic and specific description to the present essay.

Erichson has divided the six species known to him, into two groups. The first contains globular species, with very short estriate prosternum, with no lateral stria on the elytra, and with the pygidium inflexed, so as to form part of the ventral surface of the abdomen. Of this group there is but one species known to me in this country.

The second group has the prosternum bistriate, the elytra with a lateral stria and the pygidium perpendicular. The species are numerous and vary in form from almost globular to tolerably strongly depressed.

A synoptic table may be thus constructed:

A. Corpus globosum, pygidio inflexo. ABRÆUS.

1. rufus, elytris valde aciculatis, linea basali hamata insculptis punctiformis.

B. Pygidium perpendiculariter deflexum. ACRITUS.

a. Thorax basi marginatus.

* Pygidium læve, (corpore rotundato.)

1. minus convexus, niger, elytris subtilius punctulatis et aciculatis, ... discus.
2. valde convexus, niger, elytris punctatis, postice subtiliter aciculatis, ... fimetarius.
3. valde convexus, piceus, elytris subtilius punctatis, postice densius aciculatis, ... strigosus.
4. rufo-piceus, elytris punctatis et aciculatis, lateribus lævibus, postpectore punctato, ... conformis.

(Corpore subovali.)

5. rufo-piceus, elytris subtilius punctatis et aciculatis, lateribus lævibus, postpectore lævi, ... simplex.

** Pygidium punctulatum, (corpore subovali.)

6. piceus parcius punctulatus, elytris lateribus lævibus, stria laterali subtili . . . . basalis.

(nigro-piceus, punctulatus, elytris lateribus lævibus, stria laterali profunda . . . . analis.)

b. Thorax basi non marginatus.

7. ovalis, rufo-piceus, impunctatus, ... politus.
8. oblongus, subdepressus niger, punctatus, pygidio lævi, . maritimus.
9. oblongus, subdepressus, niger, grossius punctatus, pygidio punctulato . . . . exiguus.

(rotundatus, subdepressus, rufus, aciculatus, pygidio vix punctulato . . . . atomus.)

ABRÆUS *Leach.*

1. A. punctiformis, subglobosus, rufus, thorace punctato, elytris valde aciculatis, linea basali hamata notatis, pygidio inflexo, punctato. Long. ·02.

Common in the Southern States, under pine bark. I have adopted the name under which it has been sent me by Dr. Zimmerman. Body subglobose, very little longer than wide, rufous, somewhat shining; head and thorax finely punctured, the latter not margined at the base. Elytra strongly aciculate, marked on each side with a basal curved line, of a parabolic form; the outer leg of this curve may be traced quite to the apex, forming a fine marginal line; the epipleuræ and under surface of the body are very coarsely punctured. Pygidium strongly inflexed, punctured. Anterior tibiæ strongly dilated.

The prosternum is punctured, slightly emarginate behind, and not striate.

ACRITUS *Lec.*

Prosternum utrinque truncatum, bistriatum; mandibulæ retractæ; scrobiculi antennales maximi profundi, in thoracis parte inflexa antice siti; antennæ funiculo tenui, capitulo ovali; maxillæ mala interiore unco apicali armata; tarsi postici quadriarticulati; pygidium perpendiculare.

Although by Erichson considered as a portion of Abræus, I have ventured to separate these species as a distinct genus, since the characters already pointed out by Redtenbacher (Fauna Austr. 240) in the form of the posterior tarsi and the inner lobe of the maxillæ seem to indicate the necessity of removing these species from Abræus.

In the form of the antennæ and the cavities for their reception, this genus agrees perfectly with Abræus; the prosternum is, however, less flat, and is truncate posteriorly as well as in front; it is marked with a distinct stria on each side. The elytra are destitute of a marginal stria; the epipleuræ have a single entire lateral stria, and occasionally a rudiment of a second at the base. The pygidium is perpendicular, not inflexed, as in Abræus. The anterior tibiæ are more or less dilated, but always gradually so. The middle and posterior tibiæ are slender. The posterior tarsi are only four-jointed, the portion usually composing the basal joint being firmly anchylosed to the second joint.

To this genus will also belong Hister minutus *Fabr.*, and Hister nigricornis *Ent. Heft.*, both placed in Abræus by Erichson.

1. A. discus, rotundatus, minus convexus, nigro-piceus, thorace subtilissime, elytris subtiliter sat dense punctatis, illo basi marginato, pygidio lævi. Long. ·04.

Two specimens found in upper Georgia, under bark. Body round, less convex than usual, piceous-black, shining. Head very obsoletely punctulate. Thorax extremely finely punctulate, with a distinct transverse line at the middle of the base. Elytra finely and tolerably densely punctured, very slightly aciculate; epipleuræ broad, finely punctulate, lateral stria deep. Pygidium impunctured; under surface finely punctured; legs rufous, anterior tibiæ gradually very slightly dilated.

2. A. fimetarius, rotundatus, convexus, piceus vel niger, thorace punctulato, basi medio marginato, elytris minus subtiliter punctatis postice subtiliter aciculatis, pygidio impunctato, alutaceo. Long. ·04.

Abræus fimetarius Lec., Bost. Journ. Nat. Hist. 5, 54.

A pretty large species, found in the Southern and Middle States, in dung and under stones. Head very finely punctulate. Thorax not densely, very finely punctured, with a transverse marginal line at the middle of the base. Elytra not densely, somewhat coarsely punctured, punctures becoming small posteriorly and intermixed with dense fine scratches; towards the base there are usually one or two oblique abbreviated striæ visible, which, however, are sometimes entirely obsolete; epipleuræ inferiorly smooth, lateral stria deep. Pygidium impunctured, slightly chagrined. Under surface sparsely punctured; anterior tibiæ scarcely dilated.

A specimen found by Dr. Schaum at New Orleans, has the basal elytral striæ very deep, and between them about the middle, is a shorter, also oblique stria. I can find no other difference between it and the others.

From the difficulty of perceiving the characters of such minute species, the descriptions of my father are by no means as accurate in this genus as in the others contained in his Monograph. Under this species he says that the thorax is not margined posteriorly, but has a row of larger punctures. Now in all the species which have the posterior line discernible, it is formed by the limit of a series of basal punctures or aciculations, and is not an engraved distinctly defined line.

3. A. strigosus, rotundatus, convexus, vix ovalis, piceus, thorace densius punctulato, basi medio marginato, elytris confertim punctatis postice subtiliter dense aciculatis, pygidio impunctato. Long. ·03.

Two specimens from Georgia. This species resembles very much A. fimetarius, but is smaller, and the punctures of the thorax are denser and more distinct; the punctures of the elytra are smaller. Body rounded, convex, scarcely oval, shining piceous. Thorax densely, distinctly punctulate, strongly margined at the middle of the base. Elytra moderately punctured, punctures becoming small posteriorly, where they are mingled with fine dense scratches; epipleuræ almost smooth, lateral stria deep. Pygidium impunctured, obsoletely chagrined. Postpectus and abdomen sparsely punctured, anterior tibiæ very slightly dilated.

4. A. conformis, rotundatus, convexus, vix ovalis, piceus vel rufopiceus, thorace subtiliter punctulato, basi medio marginato, elytris punctatis postice subrugosis, lateribus lævibus stria laterali profunda, pygidio impunctato. Long. ·023.

Georgia, under bark. Similar in form to A. fimetarius, but only half as large, and a little less globose; varies in color from piceous to brownish-red. Thorax very finely punctured; middle of the base distinctly margined. Elytra more finely not densely punctured, punctures posteriorly smaller and mixed with scratches; the sides and epipleuræ are smooth, the lateral stria deep. Pygidium impunctured; postpectus sparsely distinctly punctured; anterior tibiæ slightly dilated.

5. A. simplex, oblongo-ovalis, convexus, rufus vel rufo-piceus, thorace subtiliter punctulato, basi medio marginato, elytris subtilius punctatis et postice rugosis, lateribus lævibus, stria laterali subtili, pygidio impunctato. Long. ·025.

Abræus simplex Lec., Bost. Journ. Nat. Hist. 5, 54, tab. 10, fig. 11.

Abundant in Georgia, under bark. This species is more oval than A. conformis, which it resembles very closely, so that the upper surface presents hardly any difference; the punctures of the elytra are, however, finer, and the posterior rugæ more numerous. The lateral stria is very fine. The postpectus is smooth; with a very powerful lens, and in a particular light, may be seen a few very minute indistinct punctures. Anterior tibiæ scarcely dilated.

6. A. basalis, oblongo-ovalis, modice convexus, piceus, parcius subtiliter punctatus, thorace basi medio marginato, elytris lateribus lævibus, stria laterali subtili, pygidio punctulato. Long. ·025.

Abræus basalis Lec., Annals of Lyceum of New York, 5, 170.

Gila and Colorado Rivers, California, under the bark of Cottonwood. This species is very similar in form to A. simplex, but is a little less convex. The more distinct punctuation of the thorax and the finely punctulate pygidium will at once distinguish it. The punctures of the elytra are less mixed with rugæ posteriorly; the sides and epipleuræ are smooth; the lateral stria is fine, and the postpectus is sparsely punctured; the anterior tibiæ are scarcely dilated.

From A. analis it differs by the less dense and more distinct punctuation, as well as by the less deep lateral stria.

(A. analis, piceus, modice convexus, leviter ovalis, thorace punctulato, basi medio marginato, elytris punctatis et postice subrugosis, lateribus lævibus, stria laterali profunda, pygidio subtiliter punctulato. Long. ·027.

One specimen from Cuba, kindly sent by Don Felipe Poey. The distinctive characters are already pointed out under the preceding species.)

7. A. politus, rufo-piceus, subovalis, modice convexus, lævissimus, stria laterali subtili. Long. ·025.

Middle, Southern and Western States, abundant under stones. This species has entirely the form of A. simplex, but is destitute of punctures both above and beneath. The lateral stria is fine but distinct, the anterior tibiæ are scarcely dilated. I have distributed this insect under the name *A. lævigatus*; on account of Hister lævigatus *Payk.* I have thought it better to change this name. Paykull's species is not an Abræus, as conjectured by my father, but is evidently a species of Cærosternus *Lec.*, and only differs from the Cuban C. lævissimus *Lec.* (Proceed. Acad. 6, 40,) in having the pectus slightly punctured. It has not been seen since Paykull's time, and is probably a West Indian species. Further comparison is necessary to determine whether Cærosternus should not be reunited to Tribalus; the rounded margin of the prosternum might be called a short broad lobe, while the lateral extension, although not lobed in its outline, might be but a very slight variation of the form described by Erichson.

8. A. maritimus, oblongus fere depressus, niger, thorace subtilius, elytris sat dense punctatis, pygidio lævi. Long. ·045.

Abræus maritimus Le Conte, Ann. Lyc. of New York, 5,170.

San Diego, California, under decomposing kelp on the shores of the ocean. This species, in form and size, equals our common Plegaderus transversus, but has all the characters of the present genus. The thorax is finely punctured, the sides are scarcely rounded; the elytra are distinctly punctured, the punctures becoming slightly aciculate posteriorly; there is a slight vestige of an oblique stria at the base; the epipleuræ are almost smooth, the lateral stria deep; the pectus and abdomen are scarcely punctured; the pygidium is impunctured; the anterior tibiæ are gradually and broadly dilated.

9. A. exiguus, oblongus, fere depressus, niger, thorace densius, elytris distinctius punctatis, pygidio punctulato. Long. ·03.

Abræus exiguus Erichson, Klug's Jahrb., 208.

Abræus aciculatus Le Conte, Bost. Journ. Nat. Hist. 5, 54; tab. vi. fig. 10.

Abræus obliquus Le Conte, Bost. Journ. Nat. Hist. 5, 54; tab. vi. fig. 12.

Abundant in the Southern States, and found also at Fort Laramie, Nebraska. Body oblong, subdepressed. Thorax densely, distinctly punctured, sometimes slightly rugous. Elytra more coarsely punctured, posteriorly more or less aciculate; lateral stria deep. Postpectus and abdomen coarsely punctured. Pygidium finely but distinctly punctulate. Feet rufous, anterior tibiæ very slightly dilated.

There is frequently a trace of an oblique stria at the base of the elytra; the concavity of the epipleuræ in this, as in some other species, causes the lateral stria in some lights to appear double.

Two specimens, which appear somewhat broader and more depressed than ordinary, form *Abræus obliquus* Lec., but after a very close examination, I cannot find any sufficient distinction. By the thorax in the one described being dislocated, so as to show the posterior edge, it was incorrectly described by my father as margined at the base.

A. atomus, rotundatus, fere depressus, rufus, thorace elytrisque aciculato-punctatis, pygidio vix punctulato. Long. ·03.

One specimen from Cuba, kindly sent by Don Felipe Poey. Body circular, depressed, shining rufous. Head finely punctulate. Thorax and elytra coarsely and densely punctured, punctures somewhat aciculate; epipleuræ ? Pygidium finely and obsoletely punctulate; anterior tibiæ not dilated.

I am not able to make a satisfactory examination of the under surface, but the form, color and punctuation are sufficient to separate it at once from the preceding species, to which alone it is allied.

BACANIUS *Lec.*

Prosternum latum, postice truncatum, antice breviter lobatum, et late rotundatum, non striatum; mandibulæ subretractæ; scrobiculi antennales magni, diffusi, ad medium thoracis partis inflexæ siti; antennæ funiculo tenui, articulis penultimis rotundatis, capitulo ovali modice compresso; pygidium inflexum; tibiæ anticæ dilatatæ, posteriores angustæ; tarsi omnes 5-articulati.

Although from the want of specimens for dissection, I am able to give but a meagre description of this genus, the characters above stated will show the necessity of separating it from Abræus, with which, from the size and form of the body, the species might be confounded. The distinction between this genus and Dendrophilus is however not so well defined; for the present it can be said, that the prosternum in Dendrophilus is rounded posteriorly and elevated in the middle and bistriate; the mesosternum is emarginate; the middle and posterior tibiæ are broadly dilated, and the pygidium is perpendicular.

Paromalus has the prosternum similar to Dendrophilus. In both the mesosternum is emarginate, while in Bacanius it is truncate.

The species constituting the second division below, ought probably to form a new genus, but the specimen has lost the antennæ, and I therefore postpone the farther consideration of the subject till new specimens were obtained.

1. B. tantillus, rotundatus, convexus, rufus, nitidus, minus subtiliter punctatus, elytris stria marginali antice abbreviata, pygidio punctulato. Long. ·035.

Middle and Southern States, under bark and in fungi. Body convex round, almost globose, brownish red, shining. Head finely sparsely punctulate. Thorax not densely, distinctly punctured. Elytra more coarsely punctured than the thorax, with traces of oblique striæ, near the base; marginal stria distinct, but not extending in front of the middle; epipleuræ sparsely punctured, with indistinct traces of a lateral line. Pygidium strongly inflexed, finely punctured. Body beneath coarsely punctured; anterior tibiæ somewhat suddenly and broadly dilated.

2. B. misellus, rotundatus, convexus, rufus, nitidus, thorace parce punctulato, elytris punctatis, stria marginali integra, pygidio lævi. Long. ·03.

Two specimens from New York, under bark. Similar in form to the preceding, but much smaller; the thorax is more finely punctured; the marginal stria of the elytra is entire, anteriorly receding from the margin; the lateral stria appears more distinct than in B. tantillus; the pygidium is smooth; under surface and feet as in the preceding.

§ 2. Pygidium perpendiculare; elytra acute marginata.

3. B? marginatus, rotundatus, modice convexus, niger, subnitidus, dense grosse punctatus, elytris margine laterali acuto, pygidio punctulato. Long. ·06.

One specimen from Illinois; Mr. Willcox. Body rounded, slightly and regularly convex, forming a small segment of a sphere, black, somewhat shining. Head densely punctulate. Thorax densely punctured, lateral margin longitudinally impressed. Elytra coarsely punctured, with slight vestiges of external oblique striæ at the base; exterior margin sharply defined; marginal stria obsolete; epipleuræ broad, flat, bistriate. Pygidium perpendicular, finely punctured. Under surface punctured, feet rufous, anterior tibiæ curved inwards, slightly dilated; posterior tibiæ very slender.

The Committee on the following paper by Dr. Greene, reported in favor of publication in the Proceedings.

Chemical Investigation of Remains of Fossil Mammalia.

By Francis V. Greene, M. D.

At the request of Dr. F. A. Genth, I have made in his laboratory a chemical investigation of several fossil remains, collected by D. D. Owen, M. D., in his late survey of Nebraska Territory. The specimens, which consisted of a brown portion of bone from a Titanotherium, the enamel and dentine of a tooth of the same animal, and a portion of the tibia of an Archæotherium, were kindly furnished me by Dr. Joseph Leidy from the collection of the Academy of Natural Sciences.

The general outline of the methods pursued in determining the constituents of these specimens is as follows:

The finely-powdered substance, being always dried over sulphuric acid, was dissolved (according to H. Rose's method for the determination of phosphoric acid) in nitric acid, and after adding mercury in sufficient quantity to combine with the phosphoric acid, it was evaporated to dryness in a water bath. Afterwards it was moistened with water and again evaporated to dryness; this operation being repeated until no odor of nitric acid could be observed at the temperature of the water bath. To this dried mass water was now added. The insoluble portion consisted only of phosphate and basic nitrate of mercury, (except in one analysis, in which iron existed in determinable quantity;) the solution contained fluoride of mercury and the other constituents as nitrates. This was filtered off, and the insoluble phosphate, after being washed and thoroughly dried, was fused with carbonate of soda, with all the precautions mentioned by Rose. The fused mass, consisting only of phosphate of soda and the excess of carbonate of soda, dissolved therefore completely in water, except in one analysis, in which a portion of the iron remaining undissolved, was filtered off and determined in the usual manner. This watery solution was then acidulated with hydrochloric acid, and the phosphoric acid precipitated in the ordinary way by sulphate of magnesia.

From the solution containing the soluble nitrates and fluoride of mercury, the mercury was precipitated by chloride of ammonium, and the filtrate from the calomel precipitated by carbonate of ammonia. As carbonate of lime and fluoride of calcium are both slightly soluble in ammoniacal salts, a small quantity of each was always deposited on evaporation of the filtrate; this was separated by filtration and added to the other portion of carbonate of lime and fluoride of calcium. This precipitate was ignited, and an excess of acetic acid added, which dissolved the carbonate of lime, leaving the greater portion of the fluoride of calcium; but, as fluoride of calcium is soluble to a certain extent in acetic acid, the whole was evaporated to dryness to get rid of the free acetic acid, and the dry acetate of lime dissolved in boiling water, and filtered from the insoluble fluoride of calcium. It being found that it always contained a small quantity of silicic acid, the mixture, after being weighed, was treated with hydrochloric acid, which left the silicic acid undissolved, the quantity of which was determined and subtracted from the previous weight, thus leaving the exact weight of the fluoride of calcium.

The solution from the carbonate of lime containing magnesia and the alkalies, was evaporated to dryness to drive off the ammoniacal salts, and the residue dissolved in sulphuric acid, the excess of which was also driven off by heat. The dry mass was dissolved in water, and acetate of baryta added to convert the sulphates into acetates. The filtrate from the insoluble sulphate of baryta was then evaporated to dryness in a platinum crucible and heated, in order to convert the acetates of baryta, magnesia and the alkalies into carbonates, which were treated with boiling water, and the soluble alkaline carbonates thus separated from the insoluble carbonates of magnesia and baryta. This latter mixture was then treated with diluted sulphuric acid, and the magnesia afterwards separated from the filtrate as phosphate of magnesia and ammonia. The carbonates of the alkalies were converted into and weighed as chlorides, and afterwards separated by bichloride of platinum.

A new portion was taken for the remaining determinations. This was dried at 220° until the weight became constant, the loss giving the quantity of water. The anhydrous substance was then heated in an open crucible until all the organic matter was burned off, and then moistened with carbonate of ammonia, as it was supposed that the high heat might have expelled a portion of the carbonic acid. The difference of weight gave the quantity of organic matter. The carbonic acid was determined in the usual manner from the loss of weight after treating with nitric acid. The nitric acid did not dissolve a small quantity of silicic acid, the weight of which was ascertained and added to the other portion. From the filtrate sulphuric acid was precipitated as sulphate of baryta.

The following are the characteristics of the specimens and the data of the analysis:

Specimen 1.—Bone of Titanotherium. Compact, with subconchoidal fracture. Tough. Hardness=4.5. Sp. gr.=2.87 (at 20° C.) Lustre, resinous. Color, brown. Opaque. On heating in a tube gives off ammoniacal water together with the odor of burned horn.

I. 1.9136 grms. gave:

1.0200	grms. of	Pyrophosphate of magnesia, (for PO_5).
0.0018	"	Silicic acid.
0.0340	"	Sesquioxide of iron.
0.0137	"	Fluoride of calcium.
0.0175	"	Pyrophosphate of magnesia, (for MgO).
1.6995	"	Carbonate of lime.
0.0504	"	Chlorides of potassium and sodium.
0.0127	"	Platinum=0.0096 chloride of potassium.

II. 1.5776 grms. gave:

0.0090	grms. of	Sulphate of baryta and silicic acid, which contained
0.0086	"	Sulphate of baryta, and
0.0004	"	Silicic acid.
0.0404	"	Sulphate of baryta (for SO_3).
0.0645	"	Carbonic acid.
0.0323	"	Water.
0.0896	"	Organic matter.

Specimen 2.—Tooth of Titanotherium.

a. Enamel. Fibrous, with uneven fracture. Very tough. Hardness=4.7. Sp. gr.=3.03 (at 20°C.) Lustre, surface vitreous, fibres pearly. Color bluish gray.

I. 1.6226 grms. gave:

0.9966	grms. of	Pyrophosphate of magnesia (for PO_5).
0.0079	"	Silicic acid.
0.0016	"	Fluoride of calcium.
0.0099	"	Pyrophosphate of magnesia (for MgO.)
1.4999	"	Carbonate of lime.
0.0454	"	Chlorides of potassium and sodium.
0.0081	"	Platinum=0.0061 chloride of potassium.

II. 1.8518 grms. gave:

0.0545	grms. of	Sulphate of baryta (for SO_3).
0.0023	"	Silicic acid.
0.0586	"	Carbonic acid.
0.0116	"	Water.
0.0470	"	Organic matter.

Specimen 3.—Tooth of Titanotherium.

b. Dentine. Compact. Fracture uneven, somewhat subconchoidal. Hardness=2.5. Sp. gr.=2.93 (at 20°C.) Lustre dull. Opaque. Color white, with gray spots and black streaks. Assumes a greenish tint when heated in presence of air, owing to the formation of manganic acid.

I. 2.0083 grms. gave:

1.1318	grms. of	Pyrophosphate of magnesia (for PO_5).
0.0129	"	Silicic acid.
0.0582	"	Fluoride of calcium.
0.0297	"	Pyrophosphate of magnesia (for MgO.)
1.7829	"	Carbonate of lime.
0.0356	"	Chlorides of potassium and sodium.
0.0095	"	Platinum=0.0072 chloride of potassium.

II. 1.1643 grms. gave:

0.0509	grms. of	Sulphate of baryta (for SO_3)
0.0018	"	Silicic acid.
0.0330	"	Carbonic acid.
0.0245	"	Water.
0.0310	"	Organic matter.

Specimen 4.—Tibia of Archæotherium.

Compact. Fracture uneven, somewhat splintery. Hardness = 4. Sp. gr. = 2·82 (at 20° C.) Lustre pearly. Opaque. Color, pinkish white. Assumes a greenish tint when heated in the presence of air. The cavities contain crystallizations of quartz, and sometimes of sulphate of baryta.

I. 2·1037 grms. gave:

1·0243	grms. of	Pyrophosphate of magnesia, (for PO_5.)
0·1070	"	Fluoride of calcium.
0·0668	"	Pyrophosphate of magnesia (for MgO.)
1·7639	"	Carbonate of lime.
0·0714	"	Chlorides of potassium and sodium.
0·0122	"	Platinum, = 0·0092 chloride of potassium.

II. 1·7400 grms. gave:

0·0345	grms. of	Sulphate of baryta and Sil. acid, which contained
0·0300	"	Sulphate of baryta, and
0·0045	"	Silicic acid.
0·0814	"	Sulphate of baryta, (for SO_3.)
0·0395	"	Carbonic acid.
0·0343	"	Water.
0·0711	"	Organic matter.

The analyses gave the following composition:

	Spec. 1.	Spec. 2.	Spec. 3.	Spec. 4.
Fe_2O_3 . .	1·777	trace	trace	trace.
MnO . .	trace	trace	trace	trace.
MgO . .	0·348	0·219	0·53	1·140
CaO . .	49·837	51·872	49·82	47·052
CaFl . .	0·716	0·099	2·90	5·086
BaO . .	0·359	—	—	1·131
NaO . .	1·134	1.288	0·75	1·572
KO . .	0·317	0·239	0·23	0·276
SiO_3 . .	0·135	0·611	0·79	0·259
SO_3 . .	1·067	1·011	1·51	2·200
PO_5 . .	34·148	39·348	36·10	*32·957
CO_2 . .	4·088	3·165	2·83	2·270
Cl . .	trace	trace	trace	trace.
HO . .	2·048	0·626	2·10	1·971
Org. Mat.	5·682	2·538	2·66	4·086
	101·656	101·016	100·22	100·00,

which may be considered as

	Spec. 1.	Spec. 2.	Spec. 3.	Spec. 4.
$2\ Fe_2O_3, 3PO_5$	2·821	—	—	—
$3\ MgO, PO_5$.	0·770	0·403	0·98	2·099
$3\ CaO, PO_5$.	69·685	83·835	77·81	68·582
$2\ NaO, PO_5$.	1·415	1·413	—	1·079
BaO, SO_3 . .	0·547	—	—	1.723
NaO, SO_3 . .	1·083	1·437	1·71	2·443
KO, SO_3 . .	0·587	0·442	0·43	0·510
CaO, SO_3 . .	—	—	0·60	—
$3\ CaO, SiO_3$.	0·382	1·727	2·23	0·732
CaO, CO_2 . .	9·315	7·212	6·45	5·172
CaO	6·605	1·284	2·35	6·517
CaFl	0·716	0·099	2·90	5·086
HO	2·048	0·626	2·10	1·971
Org. Matter .	5·682	2·538	2·66	4·086
	101·656	101·016	100·22	100·000

The analyses which have already been made show a great similarity of composition as far as regards the inorganic constituents of fossil and recent bones of mammalia, a fact which receives still farther confirmation from the above analyses. In some few points it will be noticed that the inorganic constitution of these specimens differs from that of analyses already published. This difference may be accounted for by the effects of infiltration, by which a portion of the original substances may have been washed out, whilst its place was supplied by extraneous matter. All the analyses show an excess of lime, which

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* As a small quantity of phosphoric acid was lost in its determination, the loss in the analysis was calculated as phosphoric acid.

very probably exists in the form of a basic lime salt, similar to compounds well known in mineralogy.

In order to test the correctness of the opinion that fossil bones contain fluoride of calcium in larger proportion than recent ones, the fluoride of calcium was determined with the greatest care. In no instance, however, was so large a quantity found as in the analyses of fossil reptiles by Baumert,* where the quantity of fluoride of calcium in the Zeuglodon macrospondylus amounts to 9·54 per cent, and in the Hydrarchos even to 16·67 per cent. By direct determination, Heintz† found the quantity of fluoride of calcium in two human bones to be 2·97 and 2·05 per cent; the former of which corresponds almost exactly with the quantity found in the dentine of Titanotherium. In the tibia of the Archæotherium, a portion of the fluoride of calcium may have been introduced in the same manner as the quartz and sulphate of baryta.

The Committee on the following papers by Dr. Genth, reported in favor of Publication.

On a new variety of Gray Copper, perhaps a new mineral.

By Dr. F. A. Genth.

Massive, apparently without any crystalline structure. H=4·5; Sp. Gr. ?; color nearly iron-black, when in very thin splinters subtranslucent with cherry-red color; streak brownish red; lustre sub-metallic; fracture sub-conchoidal; brittle.

B. B. fuses readily=1; gives off the odor of arsenic and sulphurous acid, leaving incrustations of antimony and zinc; with carbonate of soda on charcoal yields a globule of silver and copper. Soluble in nitro-hydrochloric acid with separation of chloride of silver.

The analysis gave the following composition:

Silver	= 10.53	p. c.	requires	1.57 S	for	Ag S	11.43
Copper	= 30·73	"	"	7.80 S	"	Cu_2 S	
Zinc	= 2.53	"	"	1.25 S	"	Zn S	
Iron	= 1.42	"	"	0.81 S	"	Fe S	
Arsenic	= 11.55	"	"	7.42 S	"	As S_3	14.05
Antimony	= 17.76	"	"	6.63 S	"	Sb S_3	
Sulphur	= 25.48	"					
	100.00			25.48			

It is found at McMackin's Mine, Cabarras County, N. C., but rarely, and is associated with Iron Pyrites, Galena, Blende, Talc and Carbonate of Magnesia.

The sulphur ratio of the sulpho-bases and sulpho-acids is =11.43 : 14.05
= 1 : 1.23

corresponding with the formula $5\ (Ag, Cu_2, Zn\ Fe)\ S+2\ (As, Sb)\ S_3$.

I had, as the data of the analysis will show, but a very small quantity of the mineral, and, therefore, although this formula is that of a new mineral, I am unwilling to give it a new name, until more of it will be found, and the analysis repeated; at present it is preferable to consider it as a variety of gray copper, whose composition is expressed by the formula $4RS+RS_3$.

The following are the methods and data of the analysis: 0.1330 grs. were dissolved in nitro-hydrochloric acid, and the chloride of silver filtered after diluting with a large quantity of water. It gave 0.0140 grs. metallic silver. The filtrate was evaporated almost to dryness, and heated with sulphite of soda; and, after in this manner the arsenic acid had been reduced to arsenious acid, the excess of this reagent decomposed by hydrochloric acid. A current of hydrosulphuric acid was then passed through the solution, which precipitated sulphides of copper, of arsenic and of antimony. This precipitate was filtered and treated with sulphide of ammonium. The remaining sulphide of copper was oxydized by nitric acid, and the oxide precipitated by caustic potash. It gave 0.0512 grs.

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* Liebig und Kopp, Jahresbericht für 1851, p. 594.

† Pogg. Ann. V. 77, p. 267.

The solution containing antimony and arsenic was boiled with hydrochloric acid and chlorate of potash, then tartaric acid, an excess of chloride of ammonium and ammonia added, and the arsenic acid precipitated by sulphate of magnesia as arseniate of magnesia and ammonia. From the quantity of magnesia in this double salt the arsenic was found by calculation. The weight of magnesia was 0.0082 grs. The filtrate from the sulphides of copper, arsenic and antimony was oxydized by nitric acid, and the sesquioxide of iron precipitated by ammonia; it was 0.0027 grs.; the zinc was thrown down from the filtrate of iron by sulphide of ammonium, and gave 0.0042 grs. oxide of zinc.

Sulphur and antimony were determined from the loss, and by calculation.

On Owenite, a new Mineral.

By Dr. F. A. Genth.

Formula.—$2(3RO, SiO_3)+(3R_2O_3, SiO_3)+6HO$.

Massive; aggregate of minute scales; cleavage distinct in one direction.

H. = 2·5; Sp. Gr. (at 20° C.) = 3·197; lustre pearly; color olive green; streak paler; very tough; fracture subconchoidal; the powder greasy to the touch; odor argillaceous.

B.B. fuses easily = 3; and gives an iron-black magnetic globule; with borax gives the reactions of iron, and with soda slightly those of manganese. Yields water in the matrass. Dissolves in hydrochloric acid.

Mr. Peter Keyser has analysed it in my laboratory, and found the following composition:

	I.	II.	Mean.	Contains Oxygen.	
Silicic Acid . .	23·101	23·317	23·21	12·05	
Sesquioxide of Iron .	13·895	13·881	13·89	4·16	11·45
Alumina . . .	15·532	15·642	15·59	7·29	
Oxide of Iron . .	34·578		34·58	7·68	8·39
Oxide of Manganese .	trace.				
Magnesia . . .	1·159	1·371	1·26	0·49	
Lime . . .	0·286	0·431	0·36	0·10	
Soda . . .	0·410		0·41	0·11	
Potash . . .	0·076		0·08	0·01	
Water . . .	10·835	10·354	10·59	9·42	
	99·872	100·060			

Found at Harper's Ferry, Virginia, in metamorphic rocks with quartz. It has impressions of Dolomite.

The name is given in honor of D. D. Owen, M. D., U. S. Geologist.

The ratio of the oxygen of $RO : R_2O_3 : SiO_3 : HO$, is:

8·39 : 11·45 : 12·05 : 9·42
·1 : 1·36 : 1·43 : 1·12, or very near
·1 : 1·50 : 1·50 : 1·00, corresponding with the formula

$$2(3RO, SiO_3)+(3R_2O_3, SiO_3)+6HO.$$

The Owenite is closely allied to some other minerals, viz. Aphrosiderite and Thuringite. All three resemble each other very much, and only by chemical examination their difference can be detected.

Aphrosiderite is a mineral not generally known; found at several localities in Nassau, and first distinguished from earthy chlorite by Fridolin Sandberger, who gave an analysis of it in his “ Uebersicht der geol. Verhältnisse des Herzogthums Nassau ;” but without calculating its formula. He found that it contains:

Silicic Acid	=	26·45	contains Oxygen	=	13·73		2·00
Alumina		21·25	“ “		9·93		1·44
Oxide of iron		44·24	“ “		9·82	10·23	1·49
Magnesia		1·06	“ “		0·41		
Water		7·74	“ “		6·88		1·00
		100·74					

This ratio leads to the formula: $3(3RO, SiO_3)+(3\ Al_2O_3, SiO_3)+6\ HO$.

Breithaupt's Thuringite is, according to an analysis of Rammelsberg, $3(3RO, SiO_3)+(2\ Fe_2O_3, SiO_3)+9\ HO$.[*]

These three minerals are therefore:

Owenite	$2(3RO, SiO_3)+(3R_2O_3, SiO_3)+6\ HO$.
Aphrosiderite	$3(3RO, SiO_3)+(3Al_2\ O_3, SiO_3)+6\ HO$.
Thuringite	$3(3RO, SiO_3)+(2\ Fe_2\ O_3, SiO_3)+9\ HO$.

The following are the data of Mr. Keyser's analyses, and the methods used for the determination of the different constituents:

I.	2.0770	Grammes	of the mineral gave:
	0.4798	“	Silicic acid.
	1.0865	“	Sesquioxide of iron.
	0.3226	“	Alumina.
	0.0670	“	Pyrophosphate of magnesia.
	0.0106	“	Carbonate of lime.
	0.0185	“	Chloride of potassium and sodium.
	0.0033	“	Platinum = 0.0025 chloride of potassium.
II.	1.2898	“	gave:
	0.4056	“	Gold.
III.	1.8920	“	gave:
	0.2050	“	Water.
IV.	1.1542	“	gave:
	0.1195	“	Water.
V.	1.3668	“	gave:
	0.3187	“	Silicic acid.
	0.7148	“	Sesquioxide of iron.
	0.2138	“	Alumina.
	0.0495	“	Pyrophosphate of magnesia.
	0.0105	“	Carbonate of lime.

I. The finely powdered mineral was dissolved in hydrochloric acid, and silica separated in the usual way, with the necessary precautions. In the filtrate the oxide of iron was higher oxydized by nitric acid, and sesquioxide of iron and alumina precipitated by ammonia; an excess of acetic acid was added to the precipitate and repeatedly evaporated to dryness in a water bath. In this manner the acetates of iron and alumina were decomposed, and sesquioxide of iron and alumina separated from the soluble acetates by filtration. Alumina and iron were separated by caustic potash. Lime precipitated from the acetates by oxalate of ammonia. The filtrate containing magnesia and alkalies was evaporated to dryness, and heated until the ammoniacal salts were expelled; from the residue the magnesia was separated from the alkalies by oxide of mercury; the chlorides of alkalies were weighed together and afterwards separated by bichloride of platinum.

II. The mineral was dissolved in hydrochloric acid and cooled, while a constant current of carbonic acid passed over it, in order to prevent the oxidation of oxide of iron by atmospheric air; then a sufficient quantity of terchloride of gold and sodium was added, and the reduced gold filtered after 24 hours' standing. From the weight of gold the quantity of oxide of iron was found by calculation.

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[*] Rammelsberg Handwörterbuch, etc., Supplement III.

III. and IV. For the determination of water, the mineral was exposed to a bright red heat in a well covered platinum crucible. The loss in weight gave the quantity of water; but this was always a little too low, because a small quantity of oxide of iron was found to have higher oxydized.

V. In analysis V the silica was separated as above, then the filtrate oxydized by nitric acid and alumina, with, sesquioxide of iron precipitated by ammonia. The precipitate was boiled with caustic potash in a silver vessel, and thus sesquioxide of iron was separated from alumina. The precipitate of sesquioxide of iron was dissolved in hydrochloric acid and precipitated by ammonia. The filtrate of it containing still a small quantity of magnesia was added to the liquid containing lime and magnesia. The lime was precipitated by oxalate of ammonia, and from the filtrate of oxalate of lime, the magnesia by phosphate of soda.

The Committee on Mr. Cassin's description of a new Scalops, reported in favor of publication in the Proceedings.

Description of a new Mole of the genus Scalops, from Oregon; a specimen of which is in the collection of the Exploring Expedition made by the U. S. Ships Vincennes and Peacock, under the command of Captain Charles Wilkes, of the United States Navy.

By John Cassin.

Scalops æneus, *nobis.*

Dentition.—Upper jaw, after the two incisors, having on each side seven false molars, which are pointed and nearly equal, except the last, which is double the size of either of the others, and has a small exterior basal lobe. Molars three, the first with four external lobes, the anterior being very small, the second large and pointed, the third short, blunt and deeply emarginate, the fourth lobe also blunt and short; besides these the first molar has one interior and one posterior lobe, second molar with three short external lobes, the intermediate one emarginate; also two interior large and pointed, and one posterior similar to the interior lobe; third molar with two short external lobes, the posterior one emarginate, and two interior lobes and one posterior lobe.

Lower jaw with two incisors on each side, the anterior of which is the shorter; these are followed by six false molars, which are pointed and nearly equal in size, except the last, which is much larger and furnished with a minute posterior lobe at the base. Molars three, each deeply sulcate on the external surface and composed of two large external lobes and three smaller and shorter internal lobes.

Dimensions.—Total length (of specimen in spirits) about 5 inches; head 2, fore feet 1.15, hind feet 1.40, tail 1.25 inches; first and fifth toes of fore feet equal, second shorter, first and fifth toes of the hind feet equal, other three nearly so.

Colors.—Entirely shining, brassy brown, very glossy, and in some lights appearing to be almost metallic; darker on the top of the head, and lighter and more obscure on the chin and throat; nose dusky; feet brownish; nails and first joint of the toes black; palms dusky; soles of the hind feet dark brown; tail light brown, thinly furnished with scattering bristles.

Obs.—This is the most beautiful species of mole yet discovered in America, and exhibits almost the brilliancy of color which distinguishes the remarkable South African animals which form the genus Chrysochloris, of this family.

A single specimen, apparently fully adult, is in the collection of the Exploring Expedition, labelled as having been obtained in Oregon. In its dentition and otherwise it is a strict congener of *Scalops Townsendii,* but is much smaller and of a different color. Its black claws are especially remarkable, and distinguish it from all other species of the genus.

The Committee on the following paper by Prof. Baird and Mr. Girard reported in favor of publication in the Proceedings.

List of Reptiles collected in California by Dr. John L. Le Conte, with description of new Species.

By S. F. Baird and Charles Girard.

The following species of reptiles were collected by Dr. Le Conte, during a scientific exploration of California made in 1850–51. As in his previous travels through various parts of North America, Dr. Le Conte, in addition to the Coleoptera which attracted his especial attention, collected in other departments of Natural History, making additions of greater or less extent in all.

The present enumeration, although containing all the species brought home by Dr. Le Conte, gives no idea of the numbers actually collected. Owing to the breaking of several jars and the difficulty of transportation, many valuable species were lost, especially from the Colorado and from San Diego.

The Batrachians from San Francisco were collected in February, 1850; the specimens from San José in April, and those from San Diego in May to September of the same year. *Bufo halophila* was found at Benicia in August, and *Rena humilis* at Vallecitas in October. The Colorado specimens were mostly collected in November, 1850, and October, 1851.*

OPHIDIANS.

1. Crotalus lucifer ?? B. and G. Proc. Acad. Nat. Sc., Phila., xi. 1852.

Hab.—San Diego, Cal. Owing to the imperfect condition of the specimen, (a dried skin,) it has been impossible to state to what species this belongs. We have, however, provisionally referred it to the above, as the one to which it bears the closest resemblance.

2. Eutainia ordinoides, B. and G. Proc. Acad. Nat. Sc., Phila., vi., 1852, 176, and Cat. N. Amer. Rept., I, 1853.
From San Francisco.

3. Bascanion vetustus, B. and G. Cat. N. Amer. Rept., I, 1853.
From San José.

4. Pituophis annectens, B. and G. Cat. N. Amer. Rept., I, 1853.
San Diego.

5. Rhinocheilus Lecontei, B and G. Cat. N. Amer. Rept., I, 1853.
San Diego.

6. Contea mitis, B. and G. Cat. N. Amer. Rept., I, 1853.
From San José.

7. Diadophis amabilis, B. and G. Cat. N. Amer. Rept., I, 1853.
From San José.

8. Rena humilis, B. and G. Cat. N. Amer. Rept., I, 1853.
From Vallecitas, Cal.

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* It is proper to remark, that besides the strong friendship manifested towards me and towards the objects of my journey, by all the officers stationed at the military posts which I visited, especial facilities were afforded by Major W. H. Emory, then in charge of the American Boundary Commission, whose valuable explorations in those desert regions have already contributed so much to science, and whose labors, I am happy to say, are still further illustrated by the collections made by me.—J. L. Lec.

SAURIANS.

1. Crotaphytus dorsalis, B. and G., Proc. Acad. Nat. Sc., Philad. vi., 1852, 126.
From the desert of Colorado.

2. Sceloporus occidentalis, B. and G., Proc. Acad. Nat. Sc. Philad. vi., 1852, 175.
From San Francisco.

3. Uta Stansburiana, B. and G., Proc. Acad. Nat. Sc., Philad., vi., 1852, 69, and *Stansbury's* Expl. of Valley of Great Salt Lake, 1852, 345, pl. 5, fig. 4—6.

4. Uta ornata, B. and G., Proc. Acad. Nat. Sc., Philad., vi., 1852, 126.
From San Diego and San Francisco.

5. Phrynosoma coronatum, Blainv.—*Girard* in Stansbury's Expl. of Valley of Great Salt Lake, 1852, Append. C. 360, pl. 8, fig. 7—12.
From San Diego.

6. Cnemidophorus gracilis, B. and G., Proc. Acad. Nat. Sc., Philad., vi., 1852, 128.
From the Desert of Colorado.

7. Elgaria scincicauda, B. and G., Proc. Acad. Nat. Sc.,.Philad., vi., 1852, 69; and in *Stansbury's* Expl. Valley of Great Salt Lake, 1852, 348, pl. 4, figs. 1—3.
From California.

8. Plestiodon Skiltonianum, B. and G., Proc. Acad. Nat. Sc., Philad., vi., 1852, 69; and in *Stansbury's* Expl. of Valley of Great Salt Lake, 1852, 349, pl. 4, figs. 4—6.
From San Diego.

9. Anniella pulchra, Gray, Ann. and Mag. Nat. Hist. No. 60, 1852, 440.
San Diego.

BATRACHIANS.

1. Bufo halophila, B. and G.—Above dark brown, beneath reddish brown, minutely blotched with black. A narrow pale ventral line from snout to coccyx. A broad patch of dull reddish extending a little obliquely from the eye to the edge of the mouth, narrowing below.

Hab. Benicia. Frequenting the edges of the sea, and jumping into the water when pursued.*

2. Hyla regilla, B. and G., Proc. Acad. Nat. Sc., Philad., vi. 1852, 174.
Syn. *Hyla scapularis*, Hallow., Proc. Acad. Nat. Sc., Philad. vi., 1852, 183.
Hab. San Francisa or San Francisco.

3. Litoria occidentalis, B. and G.—Throat smooth. Abdomen, sides of body and lower surface of thighs granulated. Tympanum very small. Fingers almost or entirely free; toes slightly webbed at the base; extremities of both not dilated. Color above pale chestnut, with obscure or obsolete blotches of darker. Beneath white. A few cross bands on the outside of the legs. A dark chestnut line beginning at the nostril, passes back through the eye, behind which it widens so as to include the tympanum, stopping just above the insertion of the arm. One or two oblique blotches of dark chestnut on each side.

Body 1 1-16th inches long; hind leg extended 1¼ inch.
Hab. San Francisco.

4. Rana Lecontii, B. and G.—Snout moderately pointed. Tympanum very small, scarcely more than half the width of the eye. Skin quite smooth. A

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* Compare the habits of Leiuperus salarius Bell, Voy. of Beagle, Zool. Rept. 39, (Lec.)

broad fold of skin on each side from head to hind legs. Longest toe scarcely webbed beyond the penultimate joint.

Above dark olive, with rather large circular black blotches distributed pretty uniformly, though smaller on the sides. Each spot is lighter in the centre. Beneath yellow, marbled with dark brown, thickly crowded except about the groins. A pale greenish line extends from just below the eye to the shoulder. Hind limbs broadly barred with dark brown. Lateral cuticular fold paler, a black blotch at the base of the arm in front.

Darker above and below, smoother, and with the snout more acute than in *Rana Daytonii.*

Length 2¼ inches. Hind limbs 3½.

Hab. San Francisco.

5. ANEIDES LUGUBRIS Baird. Iconographic Encyclopædia, II, 1859, (1st ed.) 256. *Salamandra lugubris*, Hallow., Proc. Acad. Nat. Sc., Phila., IV., 1848, 126.

Hab.—San Francisco.

6. BATRACHOSEPS ATTENUATA Bon. Fauna ital., 1841. BAIRD, Journ. Acad. Nat. Sc., Phila., I, 1849, 288. *Salamandra attenuata*, Eschsch. Zool. atl., 1853, pl. xxi. fig. 1—14.

Hab.—San Francisco.

7. TARICHA LÆVIS B. and G. Allied to *T. torosa* Gray, but smoother, having but slight indications of granulations. Tail very much compressed, with a fringe along the whole upper edge and the posterior half of the lower. Color above dark purplish brown, beneath bright yellow, the line of demarcation very distinct. Body 3 inches long ; tail 4½.

Hab.—San Francisco.

The Committee on a paper by the Rev. Mr. Berkley and the Rev. M. A. Curtis, on the "Exotic Fungi from the Schweinitzian Herbarium, &c.," reported in favor of publication in the Journal.

The Report of the Corresponding Secretary was read and adopted.

ELECTION.

Mr. H. Cooper Hanson, of Philadelphia, was elected a *Member* of the Academy.

ERRATA IN VOL. VI.

Page 2, line 4 from bottom, for *of* read *and*.
“ 3, “ 13 “ top, for *Cretacean* read *Cetacean*.
“ 33, “ 13 and 20 from bottom, for *Nipongue* read *Mpongue*.
“ 36, “ 26 from top, for *undeniable* read *undeniably*.
“ 40, “ 19 “ bottom, for *interstialis* read *interstitialis*.
“ 45, “ 5 “ top, for *thorace* read *thorax*.
“ 46, “ 18 “ bottom, for *simplicibus* read *fulcrantibus*.
“ 48, in division (*b*) of Eucnemis, for *serratæ* read *pectinatæ*.
“ 66, “ 10 from top, for *is* read *are*.
“ 114, “ 2 “ bottom, for *fulvis* read *fulvus*.
“ 141, “ 9 “ bottom, for *generus* read *genus*.
“ 149, in note (†) for *fr* read *für*.
“ 150, the three lines of the diagnosis of Cephennium corporosum have lost the initial letters: to the first add 1, to the second *pl*, to the third *a*.
“ 171, line 2 from bottom, for *Africa* read *America*.
“ 174, “ 22 “ top, for *inferior* read *anterior*.
“ 180, for *Homolosaurus* read *Homalosaurus*.
“ 181, for *Pituophis* read *Pityophis*.
“ 229, line 21 from top, for *Anchytursus* read *Anchytarsus*.
“ “ “ 40 “ top, for *picea* read *brunneus*.
“ 231, after Tostegoptera, for *Edwards* read *Blanchard*.
“ 241, line 15 from top, for *Enbradys* read *Eubradys*.
“ 302, line 13 from top, for 1859 read 1849.
“ 327, “ 31 “ top, for *læniata* read *tæniata*.
“ 329, “ 22 “ top, for *parvus* read *parvulus*, vide p. 414.
“ “ “ 26 “ top, for *Fern* read *Kern*.
“ 337, “ 31 “ top, for *Fauna* read *Faunas*.
“ 368, “ 12 “ top, for *Traünfeld* read *Fraünfeld*.
“ “ “ 29 “ top, for *truncates* read *truncatus*.
“ 377, top line, for —— read *and*.
“ 376, line 17 from bottom, for *Prisidon* read *Prisodon*.
“ 403, “ 2 “ bottom, for *Lyceum* read *State Library*.
“ 439, “ 17 “ bottom, for *Agryppus* read *Agrypnus*.
“ 454, “ 9 “ bottom, for *Endomochydæ* read *Endomychidæ*.
“ lxviii, line 22 from bottom, add *Mr. T. A. Conrad*.
“ lxxiv, line 17 from top, for *Vorselemque* read *Vorlesungen*.

The following omissions of donations to the Library, August 10th, 1852, occurred at page xxxiii:

Description of a Skeleton of the Mastodon giganteus, of North America. By John C. Warren, M. D. 4to. From the Author.

Exploration and Survey of the Valley of the Great Salt Lake of Utah. By Howard Stansbury, Capt. U. S. Topograph. Eng. 8vo. and map. From Col. J. J. Abert.

Experimental Researches in Electricity, 29th series. By Michael Faraday, Esq. From the Author.

On the Physical Character of the Lines of Magnetic Force. By Michael Faraday, Esq. From the Author.

Zoology of the Great Salt Lake of Utah, (extracted from Capt. Stansbury's Report.) From Prof. S. F. Baird.

Geognostische Wanderungen im Gebiete der nordöstlichen Alpen. Von Carl Ehrlich. From the Author.

Ueber die nordöstlichen Alpen. Von Carl Ehrlich. From the Author.